

1948

Illinois

Tests of

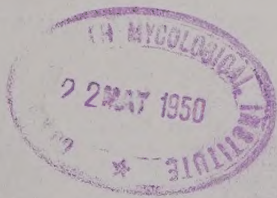
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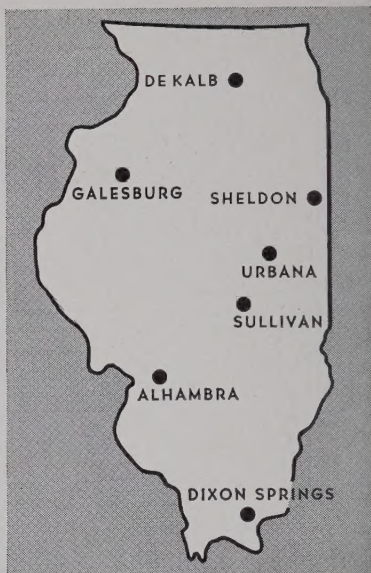
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UNIVERSITY OF ILLINOIS
AGRICULTURAL EXPERIMENT STATION in cooperation with
ILLINOIS STATE NATURAL HISTORY SURVEY . . . February, 1949

Location of 1948 test fields



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ILLINOIS TESTS OF CORN HYBRIDS IN WIDEST USE IN 1948

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AN ALL-TIME RECORD was set in Illinois in 1948 both for total yield of corn and yield per acre. The total yield of 550 million bushels exceeded the 1946 record high by 44 million bushels. The average yield per acre was 61 bushels.² Illinois now shares the national record that Iowa set in 1946.

PLAN OF THE TESTS

Number of hybrids and their sources. Two hundred eighty-nine hybrids were grown on five regular test fields. Six single-cross and three double-cross hybrids were grown on two special test fields which differed in productivity. Fifty-seven companies and individuals and the Illinois Station furnished seed for the tests (see pages 88-89).

Eighty-one hybrids were grown on each of the fields except at the Dixon Springs Experiment Station, where 60 entries were planted on the bottomland field and 11 entries on the upland field (Table 1, page 60).

A representative of the Illinois Station took almost all the seed for planting the test fields directly from the warehouses of the producers entering the corn. A few producers delivered small quantities to the Station. Seed of Illinois and U. S. hybrids in commercial production was obtained from the producers of these hybrids and also from the Illinois Crop Improvement Association.

Selection of entries. Each year seed corn producers are given an opportunity to nominate hybrids for testing on the various fields. For some fields the number of hybrids nominated is so great that they can-

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² Estimates for the average yield for the state were furnished by the ILLINOIS COOPERATIVE CROP REPORTING SERVICE, Illinois State Department of Agriculture cooperating with the U. S. Department of Agriculture.

Table 1. — GENERAL INFORMATION: Illinois Cooperative Hybrid Corn Tests, 1948

Field, county, location, and number of entries	Date planted	Date harvested	Average acre-yield		Moisture in grain	Erect plants	Protein	Oil
			Total	Sound				
			<i>bu.</i>	<i>bu.</i>	<i>percl.</i>	<i>percl.</i>	<i>percl.</i>	<i>percl.</i>
DeKalb: DeKalb N 81.....	May 20	Oct. 28	68.0	67.0	29.3	99	9.9	4.7
Galesburg: Knox WNC 81....	May 14	Oct. 21	111.4	108.5	23.9	71	11.0	5.0
Sheldon: Iroquois ENC 81....	May 22	Oct. 19	105.4	102.9	25.2	96	10.8	4.8
Sullivan: Moultrie SC 81.....	May 21	Nov. 9, 12	107.2	105.6	19.3	77	10.1	4.8
Dixon Springs: Pope Ex.S								
Bottomland 60.....	May 26	Nov. 4	65.2	64.7	25.3	98	8.9	4.7
Upland 11.....	May 26	Nov. 5	50.7	49.2	24.1	90	10.2	4.5

COOPERATORS: EARL and WEBSTER GEHRING, *Knox county*; JOHN B. RICE, *Iroquois county*; R. B. VANDEVEER, Farm Manager, Illinois Masonic Home Farm, *Moultrie county*. The DeKalb field in DeKalb county is managed by the Illinois Station; FRANCIS HART is overseer. The Pope county fields at Robbs are parts of the Dixon Springs Experiment Station of which R. J. WEBB is superintendent. (Because of crop failure on the Alhambra field, no 1948 data are available.)

not all be tested. For instance, 149 hybrids were nominated this year for testing on the Galesburg field. This situation poses the problem of selecting entries.

The "lattice-square" design that was used in laying out the entries on each field limits to 81 the number of entries that can be included. Of these, six in 1948 were Station-produced, open-pedigree hybrids that serve as standards, or checks, with which to compare the performance of the other entries. The remaining 75 entries were chosen, for the most part, because the seed is being produced in large quantities. A few hybrids, however, were tested to see if their field performance met the requirements for certification.

To widen the number of entries tested, a new plan was tried in 1948. Some of the hybrids that had ranked high for the three previous years — 1945, 1946, and 1947 — were omitted. These top-ranking hybrids are given an honor position in the present report as "proven hybrids."

Soil characteristics of fields. The test fields were medium to high in productivity, and each represents a soil type common to the region where it is located. Each field was selected carefully for uniformity in soil type, productivity, and drainage.

In 1948 the northern Illinois test was moved to DeKalb county. The other tests were conducted on the same farms as in 1947. The approximate locations of the test fields are shown on the map on the inside front cover. General information on soil characteristics and soil management is given in Table 2.

Table 2.—TESTING FIELDS: Soil Characteristics and Management Practices

Soil type	Lime requirement	Available phosphorus	Available potassium	Previous crops and soil management
NORTHERN: DeKalb				
Harpster clay loam.....	^{tons} 0	High	Medium	Soybeans 1945; corn 1946; oats and mixed clovers 1947; lime has been applied.
WEST NORTH-CENTRAL: Galesburg				
Muscatine silt loam.....	3	Medium	Very high	Corn 1943-1944; oats-rape hog pasture 1945; corn 1946; oats-rape hog pasture 1947; lime and rock phosphate have been applied.
EAST NORTH-CENTRAL: Sheldon				
Drummer clay loam.....	0	Medium	High	Corn 1943-1944; oats 1945; timothy-alfalfa-sike clover hog pasture 1946-1947; 2½ tons lime applied 1943; manure 1947-1948; 125 lbs. 3-18-9 applied at planting.
SOUTH-CENTRAL: Sullivan				
Flanagan silt loam.....	1	Slight	High	Alfalfa 1941-1943; corn 1944; alfalfa-timothy pasture 1945-1946; corn 1947; 2 tons lime applied 1946.
SOUTHERN: Alhambra				
Putnam silt loam.....	0	High	High	Wheat 1941; corn 1942; oats 1943; soybeans 1944; wheat 1945; red clover 1946; 500 lbs. potash broadcast in 1947 before planting.
EXTREME SOUTHERN: Robbs (Dixon Springs)				
Upland field: Ava silt loam....	Trace	Low	Medium	Wheat and red clover 1947, previously was timothy-sweet clover sod for 15 years.
Bottomland field: Bonnie silt loam.....	1	Very low	Very high	Corn 1944; soybeans 1945; corn 1946-1947; manured 1948.

The soil-type designations, uniformity, and physical characteristics of the above fields have been approved by HERMAN WASCHER, Assistant Professor of Soil Survey Research.

Field-plot design. A 9 x 9 randomized, lattice-square field-plot design with 5 replications was used on the DeKalb, Galesburg, Sheldon, and Sullivan fields. Controlled, randomized block designs with 6 replications were used on the Dixon Springs bottomland and upland fields.

Method of planting. All test fields were planted by hand on land prepared in the regular way for corn. Each plot consisted of 2 rows 10 hills long, except at DeKalb where the plots were only 9 hills long. Three kernels were dropped in each hill except on the fields at Dixon Springs, where only 2 kernels were planted.

Data from all plots were included in the results. The only correction for imperfect stand was the following adjustment for missing hills:

$$\text{Ear weight in field} \times \left(1 + \frac{\text{missing hills}}{\text{hills present}} \times .6 \right) = \text{adjusted ear weight.}$$

GROWING CONDITIONS

The 1948 growing season was, in general, an excellent one for corn in Illinois. The cool, wet spring weather let up early in May, allowing early planting. A well-distributed rainfall, bright sunny days, and no excessively high temperatures combined to give corn near optimum growing conditions thruout the summer.

All test fields, except the upland plot at Dixon Springs, were planted in excellent seedbeds. The compactness of the soil on the upland field and destruction of the seedlings by crows resulted in a poor stand there. Germination was good on all fields but Sheldon, where a dry period following planting reduced the stand. The corn planted at Alhambra on May 27 was seriously damaged by the black cutworm, *Agrotis ypsilon* (Ropt.). The field was double-disked and replanted on June 18. A combination of wet weather while the corn was young and the poor drainage characteristics of this field resulted in a crop failure. The 1947 results and three-year summary are therefore again presented for this area.

In August there were scattered hail storms in the west north-central area. The Galesburg field was not struck, but high winds accompanying the storm caused considerable lodging. Sullivan was the only other plot where lodging was of importance.

Warm, sunny days in the fall allowed the crop to mature before the first general state-wide frost occurred on October 18.

INSECT PESTS

European corn borer. During 1948 none of the test fields were located in areas where losses due to the European corn borer, *Pyrausta nubilalis* (Hbn.) were important. Neither stalk breakage nor ear-dropping because of borers was extensive enough anywhere to bring out any differences in these hybrids to attack by this insect.

Corn rootworms. Corn rootworms, especially the southern corn rootworm, *Diabrotica duodecimpunctata* (F.), were active in all test fields. But weather caused lodging after rootworm attack on only two fields — Galesburg and Sullivan.

On the Galesburg field a midsummer windstorm caused particularly severe lodging. Here, of the plants leaning 30 degrees or more, the average lodging was 63.9 percent (a difference of less than 22.8 percent between any two entries is not significant) (Table 7).

A summary of the amount of lodging caused by rootworm in 13 hybrids tested in each of three years at Galesburg is given in Table 6. Tho differences of less than 20.7 percent between entries leaning 30 degrees or more are not significant, there are large enough differences in a number of instances to indicate that some hybrids are better able to withstand rootworm attack than others.

On the Sullivan field conditions were less severe. Average lodging of plants leaning 30 degrees or more was 26.7 percent; for those leaning 45 degrees or more, it was 3.8 percent (Table 11). But the damage on this field was so spotted that the differences among the hybrids cannot be said to have any significance.

DISEASE DAMAGE¹

Stalk rot diseases. In the latter part of August scattered plants died from stalk rot in many cornfields in a large part of the state. The percentage of diseased plants increased progressively until late fall. From October 12 to November 11, 39.7 percent of the stalks were observed to be infected with *Diplodia zeae*, 17.6 percent with *Gibberella zeae*, and smaller percentages with *Fusarium moniliforme*, *Nigrospora oryzae*, and *Sclerotium bataticola*. Specimens sent to the Station, together with complaints about lodging from McHenry, Whiteside, Warren, Pike, Jefferson, and White counties, indicated that all were caused by *Gibberella*. Thus this fungus caused considerable damage even if, on the average, it was not the most prevalent one. In a few fields lodging resulted from *Diplodia*, but on the whole the corn stood up remarkably well considering the widespread infections.

On the basis of studies made in 57 counties, the loss from all stalk rots was estimated at 4.3 percent.

¹ Estimates of losses are based in part on survey data obtained by G. H. BOEWE, Assistant Plant Pathologist, Illinois State Natural History Survey.

Root rot. Seedling blight and root rot were of minor importance in 1948. Plants killed prematurely by stalk rots often had a decayed root system later in the season, but the decay was probably not caused by parasitic organisms.

Smut. Loss from smut again, as during the last few years, was low. It was estimated at only .4 percent.

Leaf diseases. A little Stewart's disease and *Helminthosporium* blight could be found in nearly every field in central and southern Illinois, but the damage, if any, was very slight.

Ear rots. Damage from ear rot was low except in some fields in north-central and northern Illinois that were killed by frost when immature. For instance, in a field in Boone county all the ears were reported rotted. This rot was caused primarily by a combination of *Hormodendrum* and *Nigrospora*. The corn on all test fields had become moderately mature before the first killing frost. Data on the causes of kernel damage are given in Table 3. Data on the percent of kernel damage in individual entries are given in the tables for the various fields. Rot damage was low because the fall weather was generally dry.

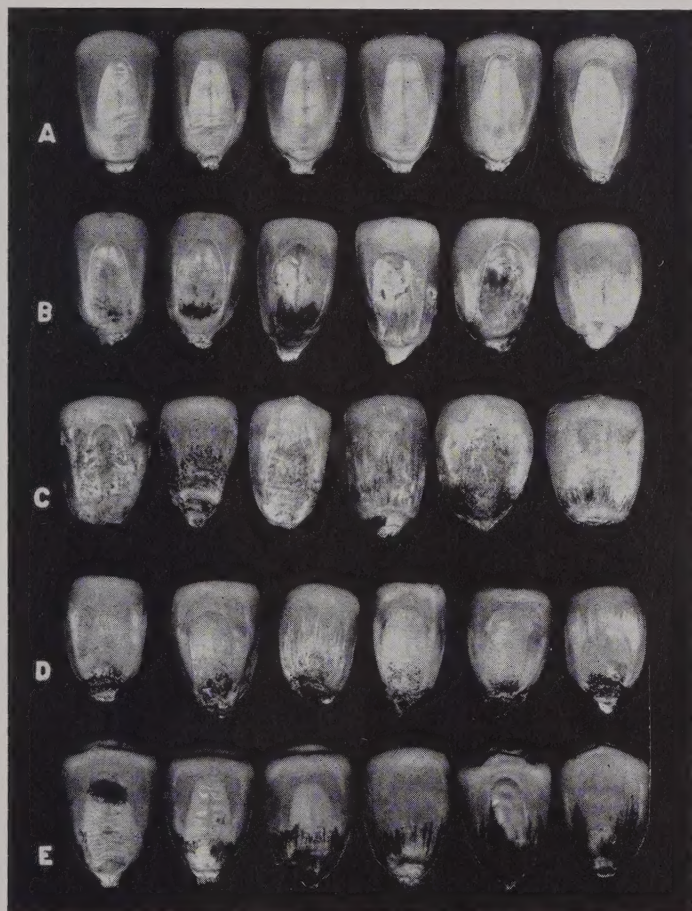
Diplodia, *Nigrospora*, and *Gibberella* rots were more prevalent than in 1947. *Hormodendrum* was much more prevalent than it had been for many years, causing not only commercial damage to market corn but also considerable damage in numerous seed-producing fields in the northern third of the state. *Physalospora* rot, which looks very much like

Table 3.—ROT DAMAGE CAUSED BY FUNGI: Average of All Entries in Five Test Fields, 1948

(Figures based on laboratory tests)

Rank ^a	Fungi causing damage	Corn kernels damaged by rot					
		DeKalb	Galesburg	Sheldon	Sullivan	Dixon Springs	
						Bottomland	Upland
		<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>
1	<i>Diplodia zeae</i>	.11	.57	1.75	.92	.01	.82
2	<i>Fusarium moniliforme</i>	.08	.96	.16	.29	.60	.33
3	<i>Nigrospora oryzae</i>	.63	.39	.07	.07	.02	.06
4	<i>Hormodendrum</i> sp.....	.28	.16	.18	.02	.02	.02
5	<i>Physalospora zeae</i>	0	0	0	.03	0	.66
6	<i>Gibberella zeae</i>	.18	.19	.13	.08	.02	0
7	<i>Penicillium</i> spp.....	.02	.19	.02	.04	.01	0
8	Miscellaneous.....	.06	.06	.04	.01	.01	0
	Total.....	1.36	2.52	2.35	1.46	.69	1.89

^a Based on total damage.



Kernels in top row (A) are sound and free from disease. The kernels in the other rows show four diseases that were common in 1948: (B) *Diplodia zeae*; (C) *Phy-salospora zeae*; (D) *Nigrospora oryzae*; (E) *Hormodendrum* sp.

Diplodia rot in the earlier stages, has occurred sporadically in Illinois from time to time. This year it was very evident in the upland field at Dixon Springs.

MEASURING PERFORMANCE

The entries in the 1948 test are listed in the tables in the order of their *total* yields. Those having the same total yield and no damaged kernels are placed in order by percentage of erect plants.

Erect plants. The percentage of erect plants in each plot of each entry on each field was estimated at the time of harvest. The ratings for erect plants show how the percentage of erect plants for each hybrid compared with the percentage of erect plants on the field as a whole. (Each rating is obtained by dividing the percentage of erect plants for that hybrid by the percentage of erect plants on the field as a whole and multiplying by 100.)

Lodging may have been due to rootworm damage, weak or rotted roots, corn borer damage, stalk rots, or weak stalks. Stalks broken above the ear were not considered lodged.

Yield of grain. To determine shelling percentage, all the ears from one replicate of each entry were shelled. At Dixon Springs, however, because it was not practicable to shell all the ears in a replication, the shelling percentage of all entries was assumed to be 80 percent. A sample of shelled corn was taken from the Dixon Springs plots by hand-shelling 6 ears of each entry in one replication.

From the shelled corn one sample was taken to determine the percentage of moisture at harvest¹ and to determine the percentage of damaged kernels. The percentage of damaged corn was determined according to the federal grain standards.

The total acre-yield was calculated as shelled corn containing 15.5 percent moisture, the upper limit allowable in No. 2 corn. The total yield thus obtained for three fields (Sullivan, Galesburg, and Sheldon) was adjusted according to the procedure outlined by Cochran for randomized lattice-square designs.² The total yield of sound corn was computed by deducting the amount of damaged corn from the total yield.

Each hybrid's rating for sound yield, expressed in terms of percentage, is simply the ratio between the bushels of sound corn produced by the hybrid and the average number of bushels of sound corn produced by all the entries on the field.

Height of ear. Notes on comparative height of ear were taken at harvest time. Each plot of each entry was placed in one of the five following categories: *low*, *mid-low* (midway between low and medium), *medium*, *mid-high* (midway between medium and high), and *high*. Begin-

¹All moisture determinations were made with a Steinlite moisture tester.

²Cochran, W. G. "Some Additional Lattice-Square Designs." *Iowa Agr. Exp. Sta. Res. Bul.* 318. May, 1943.

ning with *low* and continuing progressively to *high*, these terms were assigned numerical values from 1 to 5 to permit the averaging of the plots.

Oil and protein analysis. For the first time, a sample of each entry on each field was sent to the Northern Research Laboratory at Peoria for an analysis of the oil and the protein content of the grain.

Significance of yield differences. Too much confidence must not be placed in the particular ranking of a hybrid in the following tables, for chance has played a part in determining its position. Unaccountable variability in the soil and conditions on the field will cause differences in yield that are not inherent in the hybrids themselves.

The part played by chance in the 1948 tests has been calculated for total yield by the mathematical procedure known as "analysis of variance." In each table there is stated the approximate difference which there must be between any two entries in order for them to show a true inherent difference. Unless two hybrids differ by at least this amount, there is no assurance that one hybrid is inherently higher yielding than the other.

RESULTS OF TESTS

Detailed results of the tests on six regular test fields and the two special soil-adaptation fields are given in Tables 4 to 14 on the following pages. See also Table 3 on page 64 on ear-rot damage.

Readers are urged to keep in mind these two things when comparing the performance of hybrids on any one field:

1. Small differences in yield do not necessarily indicate the superiority of one hybrid over another. See each table for the amount one hybrid must exceed another before it can be considered the better.

2. The Summary section of each table is the most important part. At least three years' results are necessary to give a reasonably reliable picture of a hybrid's ability to perform under varying seasonal conditions.

Table 4. — NORTHERN ILLINOIS: Kings, Woodstock, and DeKalb
(Kings 1946, Woodstock 1947, DeKalb, 1948)

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		Height of ear	Protein	Oil
						Erect plants	Sound yield			
SUMMARY 1946-1948: Less than 5.1 bushels difference between total yields of any two entries is not significant.										
		bu.	perct.	perct.	perct.	perct.	perct.		perct.	perct.
1	Crow 407.....	70.5	3.1	28.2	90	99	105	M-high	....	....
2	Illinois 751 (Station)...	69.8	1.5	28.2	89	97	104	Medium	....	....
3	Sieben S-340.....	69.2	...	32.2	91	100	...	M-high	....	....
4	Ferris F-11.....	69.2	...	27.1	92	101	...	Medium	....	....
5	Super Crost F-138.....	69.1	1.2	27.9	88	96	106	Medium	....	....
6	Pride D-66.....	68.8	...	29.1	95	104	...	M-high	....	....
7	Illinois 101 (Station)...	68.5	.7	27.5	93	102	103	Medium	....	....
8	Illinois 1091A (Station)...	68.4	2.7	31.1	90	98	102	Medium	....	....
9	Super Crost F-140.....	68.2	1.1	28.3	93	102	103	Medium	....	....
10	Furr 67A.....	68.2	1.3	27.7	91	100	105	Medium	....	....
11	Ward 110.....	66.8	.9	28.3	96	105	100	Medium	....	....
12	P.A.G. 52.....	66.5	1.2	24.4	95	105	100	Medium	....	....
13	Moews 14.....	66.0	...	28.6	93	102	...	Medium	....	....
14	DeKalb 615.....	65.9	2.5	29.0	91	100	99	Medium	....	....
15	Crow 360.....	65.3	...	33.0	80	87	...	M-high	....	....
16	DeKalb 404A.....	64.0	.9	26.8	94	103	97	Medium	....	....
17	Lowe 15.....	63.1	...	29.5	94	103	...	Medium	....	....
18	Crow 514(W).....	59.5	...	27.7	88	96	...	M-high	....	....
	Average of all entries	67.1	1.6	28.6	92	...	...	.....	....	....
1948 RESULTS (DeKalb): Less than 8.6 bushels difference between total yields of any two entries is not significant.										
1	Farmcraft PC-43.....	79.9	.2	29.7	96	97	119	Medium	8.8	4.4
2	Huey H-75.....	79.1	1.3	28.3	100	101	116	M-high	10.5	5.3
3	P.A.G. 253.....	78.0	1.0	25.6	100	101	115	Medium	9.5	4.8
4	Holmes Utility 11.....	77.8	1.0	25.6	100	101	115	Medium	9.5	4.8
5	DeKalb 410.....	77.5	1.3	26.7	99	100	114	M-high	9.7	4.8
6	Pioneer 349.....	76.9	.6	30.0	97	98	114	Medium	9.6	4.7
7	Keystone 44.....	76.4	.7	29.5	100	101	113	Low	9.1	3.9
8	Sieben S-340.....	76.4	.7	30.7	100	101	113	High	9.1	4.1
9	Hulting 240.....	76.0	1.4	26.9	99	99	112	Medium	9.8	4.3
10	Illinois 751 (Station)...	75.7	2.0	26.3	100	101	111	Medium	9.7	4.4
11	Super Crost F-140.....	75.0	.6	28.1	100	101	111	Medium	10.1	4.8
12	Illinois 1508 (Station)...	75.0	2.9	33.6	99	100	109	Medium	8.7	4.7
13	Pride D-66.....	74.6	.1	29.5	100	101	111	M-high	9.7	4.3
14	Illinois 101 (Station)...	74.6	1.4	29.4	100	101	104	Medium	9.9	5.0
15	Sieben S-440E.....	74.5	.4	28.4	99	100	111	M-high	10.6	5.2
16	Keystone 33.....	74.2	.4	29.7	100	101	110	Medium	9.6	4.6
17	DeKalb 240.....	74.0	1.0	25.7	98	99	109	Medium	9.1	4.8
18	Pioneer 4040.....	73.7	4.6	27.6	100	101	105	Medium	9.1	4.2
19	P.A.G. 60.....	73.5	0	24.9	100	101	110	Medium	9.3	4.8
20	Super Crost FD-3A.....	73.0	.1	25.3	98	99	109	M-high	10.7	4.8
21	Ponder 230.....	72.5	.2	27.7	99	99	108	Medium	9.1	5.2
22	P.A.G. 2847.....	72.5	.4	23.3	96	97	108	M-low	10.0	4.6
23	Bear OK-22.....	72.3	4.7	30.9	98	99	103	Medium	9.4	4.4
24	Moews 85C.....	72.0	1.1	25.3	100	101	106	M-high	9.8	5.2
25	Crow 407.....	71.7	2.6	28.9	99	100	104	M-high	9.7	5.0
26	Ferris F-11.....	71.4	.8	28.0	100	101	106	Medium	10.0	4.8
27	P.A.G. 299.....	71.4	4.8	27.7	100	101	102	M-high	9.8	4.8
28	Iowahealth AF-11.....	71.1	.1	31.4	100	101	106	M-high	9.6	4.6
29	Moews 14.....	71.1	.4	28.0	99	100	106	M-low	9.6	4.6
30	P.A.G. 282.....	71.0	.8	26.6	100	101	105	Medium	10.1	4.8
31	Ward 100.....	70.6	.9	28.2	100	101	104	M-high	9.5	5.1
32	Huebisch H-44.....	70.5	.2	28.7	100	101	105	M-high	10.8	5.2
33	Furr 23.....	70.3	.3	26.6	99	100	105	M-low	10.2	4.8
34	Pioneer 353A.....	70.1	.3	25.5	98	99	104	Medium	10.6	4.6
35	Illinois 1091A (Station)...	70.1	3.2	32.0	100	101	103	Medium	9.4	4.5
36	Nichols 75.....	69.9	3.7	33.0	100	101	100	M-high	8.9	4.4

(Table is concluded on next page)

Table 4.—NORTHERN ILLINOIS—concluded

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		Height of ear	Protein	Oil
						Erect plants	Sound yield			
1948 RESULTS: DeKalb — concluded										
		bu.	perct.	perct.	perct.	perct.	perct.		perct.	perct.
37	Super Crost F-138.....	69.8	2.2	30.4	99	100	99	Medium	10.2	4.8
38	Frey 410.....	69.7	.2	27.6	98	99	104	M-high	9.8	4.9
39	Super Crost F-145.....	69.3	.4	27.8	96	97	103	M-high	10.2	4.8
40	DeKalb 406.....	69.2	1.8	31.8	100	101	101	Medium	9.4	4.5
41	Furr 66A.....	69.1	3.4	27.6	99	100	100	Medium	9.8	4.4
42	DeKalb 615.....	68.1	.1	29.2	97	98	102	Medium	9.4	4.4
43	P.A.G. 52.....	67.9	.6	25.7	100	101	101	M-low	10.4	5.0
44	Sieben S-440.....	67.8	1.6	27.8	99	100	100	M-high	9.9	4.5
45	Crow 360.....	67.6	.1	31.3	97	98	101	M-high	9.4	4.6
46	Munson MX.....	67.4	1.4	31.3	100	101	99	M-low	9.4	4.8
47	Illinois 1375 (Station).....	67.2	1.7	31.1	98	99	98	Low	10.1	5.1
48	P.A.G. 56.....	67.1	1.3	23.7	98	99	99	Medium	10.4	5.2
49	Producers 311.....	67.0	1.1	33.3	100	101	99	Medium	11.1	4.8
50	Moews 85B.....	66.9	1.7	28.0	99	100	98	Medium	9.8	4.5
51	Ward 110.....	66.5	0	27.8	100	101	99	Medium	10.5	4.9
51	Ward 114.....	66.5	.4	34.2	99	100	99	M-low	9.3	4.2
53	DeKalb 404A.....	66.1	0	28.7	98	99	99	M-low	9.3	4.8
54	Illinois 1289 (Station).....	65.3	1.5	30.8	99	100	96	Medium	10.4	4.9
54	Furr 67A.....	65.3	3.1	29.2	98	99	94	M-low	9.6	4.6
56	Producers 315.....	65.3	3.4	28.0	98	99	94	M-low	10.2	4.9
56	Pioneer 343.....	64.7	.4	33.6	100	101	96	Medium	9.6	4.8
57	Lowe 52.....	64.7	6.7	30.9	100	101	90	Medium	9.2	4.8
59	Pioneer 344.....	64.5	1.0	31.8	99	100	95	Medium	10.6	4.9
60	Crow 514(W).....	64.3	.2	30.4	97	98	96	M-high	10.4	4.1
61	Holmes Utility 9.....	64.2	.1	27.5	99	101	96	Medium	9.8	4.8
61	Super Crost FD-3.....	64.2	1.0	28.7	100	101	95	M-high	9.9	4.5
63	Funk G-16A.....	63.9	.9	30.5	100	101	95	Medium	10.6	4.7
64	Super Crost F-150.....	62.9	.4	34.4	99	100	93	M-high	11.0	4.6
65	Producers 305.....	62.8	.1	26.7	100	101	94	M-low	10.6	4.6
66	Lowe 22.....	60.8	3.7	37.2	100	101	87	M-high	9.2	4.3
67	Super Crost FD-4.....	60.5	3.4	32.5	98	99	88	M-low	10.2	4.6
68	National 114-1.....	60.2	.3	27.8	99	100	89	Medium	11.5	4.5
69	Moews 85A.....	60.0	.7	25.9	100	101	89	Medium	10.2	4.6
70	Doubet D-1E.....	59.5	.3	32.7	100	101	88	Medium	11.0	4.7
71	Lowe MME.....	59.4	.2	24.5	100	101	88	M-low	10.4	5.2
71	United U-32A.....	59.4	.3	29.3	99	100	88	Medium	10.1	5.0
73	Producers 320.....	59.3	2.8	33.0	98	99	86	Medium	10.5	4.9
74	Lowe 15.....	59.2	.3	31.2	98	99	88	Medium	10.7	4.8
75	Lowe 32.....	58.5	.4	24.8	100	101	87	Medium	9.4	4.4
76	Pioneer 350A.....	58.4	0	30.4	100	101	87	Medium	9.6	4.6
77	Ponder 180.....	57.2	3.1	34.4	100	101	83	M-low	9.9	5.0
78	Hulting J-41.....	55.7	.2	30.8	99	100	83	M-low	10.5	4.5
79	Super Crost 404(W).....	55.6	1.7	36.2	98	99	82	M-high	10.6	4.5
80	Appl A-202.....	53.2	9.3	37.6	99	100	72	Medium	10.2	4.9
81	Lowe 24.....	49.7	.4	32.2	99	100	74	M-low	9.6	4.4
Average of all entries		68.0	1.4	29.3	99	...	...	.....	9.9	4.7

PROVEN HYBRIDS: Most of the following hybrids were not included in the 1948 DeKalb tests because they were top-ranking in the previous three years:

Furr 67A	DeKalb 609	Frey 425
Sieben S-450	Pioneer 340	Ferris F-11
Doubet D-1	Producers 315	P.A.G. 366A
Nichols 5A		

Table 5.—WEST NORTH-CENTRAL ILLINOIS: Galesburg

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		Height of ear	Protein	Oil
						Erect plants	Sound yield			
SUMMARY 1946-1948: Less than 4.2 bushels difference between total yields of any two entries is not significant.										
		bu.	percl.	percl.	percl.	percl.	percl.		percl.	percl.
1	Pioneer 336	106.2	2.0	21.8	75	99	110	M-high	....	....
2	Schwenk S-24	105.0	1.3	22.6	77	102	110	M-high	....	....
3	P.A.G. 170	104.3	1.9	20.9	76	100	108	M-high	....	....
4	Ainsworth X-21	102.0	1.8	23.2	84	113	105	M-high	....	....
5	U. S. 13	100.5	1.7	23.8	80	103	105	High	....	....
6	P.A.G. 392	99.5	.9	21.8	80	107	102	M-high	....	....
7	Sieben S-440	99.1	1.0	20.6	75	101	103	Medium	....	....
8	Morton M-12	97.6	1.5	22.7	78	105	101	Medium	....	....
9	Funk G-37	95.9	1.8	21.8	77	102	99	M-high	....	....
10	DeKalb 628A	95.2	1.2	23.0	73	97	99	M-high	....	....
11	Crow 607	95.1	3.3	22.5	68	89	96	M-high	....	....
12	Farmcraft FC-47	94.8	1.1	23.2	63	82	98	Medium	....	....
13	Morton M-380	93.1	.5	23.7	78	105	98	Medium	....	....
14	DeKalb 816	92.8	1.2	24.0	80	106	97	High	....	....
15	Lowe 520	88.6	1.0	22.3	83	113	90	M-high	....	....
16	Ward 120A	86.3	1.4	24.8	73	95	92	High	....	....
	Average of all entries	97.2	1.5	22.7	76	...	...	....	....	....

1948 RESULTS: Less than 7.5 bushels difference between
total yields of any two entries is not significant.

1	P.A.G. 392	126.2	1.4	22.7	77	108	115	High	11.1	4.8
2	Illinois 1511 (Station)	126.1	6.1	23.5	60	84	109	High	10.9	5.0
3	Iowath AQ	124.5	4.2	22.4	72	101	110	M-high	11.4	5.1
4	P.A.G. 390	121.9	3.6	22.3	67	94	108	M-high	11.8	4.9
5	Pioneer 313B	121.6	4.2	27.4	71	100	107	M-high	10.8	5.1
6	Illinois 1515 (Station)	121.5	.6	23.9	75	106	111	M-high	11.2	5.0
7	Lowe 562	121.1	7.8	22.2	80	113	103	M-high	10.8	5.2
8	Pioneer 336	120.9	4.8	21.9	69	97	106	High	11.8	5.0
9	Frey 645	120.4	1.5	24.6	68	96	109	High	11.2	5.2
10	Schwenk S-24	120.2	2.1	24.9	74	104	108	High	10.6	4.7
11	Ainsworth X-21	119.6	3.7	23.9	71	100	106	M-high	11.5	4.9
12	Super Crost F-169	118.9	2.2	23.7	72	101	107	M-high	11.2	5.2
12	Stewart S-11	118.9	3.0	22.3	68	96	106	High	11.2	5.0
14	Ainsworth X-13-3	118.5	2.3	22.6	77	108	107	High	11.1	5.0
14	Farmcraft PC-67	118.5	1.3	23.8	68	96	108	Medium	11.0	4.9
16	Illinois 1416 (Station)	118.4	4.7	24.5	69	97	104	Medium	11.0	5.3
17	DeKalb 817A	117.0	2.8	24.9	72	101	105	M-high	11.6	5.4
18	Producers 900	116.6	3.6	24.6	78	110	104	M-high	11.2	5.1
19	Illinois 21 (Station)	116.4	3.5	23.8	77	108	103	M-high	10.6	5.0
20	U. S. 13 (Lepper)	116.0	3.8	25.2	77	108	103	High	10.6	4.9
20	Ainsworth X-201	116.0	1.8	25.5	79	111	105	High	11.6	5.1
22	Lowe 514	115.6	2.6	23.1	77	108	104	High	10.6	4.7
23	Doubet D-11	115.5	1.2	23.0	69	97	105	M-high	11.1	5.3
24	Super Crost 746	114.9	2.7	24.8	72	101	103	M-high	10.6	4.8
24	Producers 940	114.9	5.8	21.9	71	100	100	High	11.4	4.9
26	Kelly K-77	114.8	6.5	23.2	69	97	99	M-high	11.0	4.8
27	Funk G-77	114.7	1.9	22.8	71	100	104	M-high	10.6	5.2
28	Sieben S-340	114.1	.3	23.2	77	108	105	M-high	10.8	4.5
29	P.A.G. 282	114.0	2.1	22.2	70	99	103	Medium	10.7	5.2
30	Bear OK-33	113.6	1.4	24.6	72	101	103	M-high	10.5	4.6
30	Wards 118	113.6	5.2	22.4	71	100	99	High	11.2	4.9
32	Bear OK-31	113.5	.6	23.4	85	120	104	M-high	11.4	5.3
32	Stiegelmeier S-201	113.5	1.0	25.1	71	100	104	M-high	10.5	5.2
34	Sieben S-440	113.4	1.2	21.1	68	96	103	M-high	11.6	5.2
35	Super Crost FD-7	113.2	1.9	21.1	69	97	102	M-high	11.2	5.0
36	Kelly K-99	112.4	.3	24.6	77	108	103	High	10.3	5.0
37	National 125-1	112.2	.1	22.8	78	110	103	M-high	11.5	5.3
38	Frey 692	111.7	3.1	25.1	66	93	100	M-high	10.8	4.8
38	Lowe 523	111.7	3.0	23.8	73	103	100	Medium	10.4	5.0
40	Hulting 380	111.5	.6	23.0	54	76	102	M-high	11.2	4.8

(Table is concluded on next page)

Table 5. — WEST NORTH-CENTRAL ILLINOIS — concluded

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		Height of ear	Protein	Oil
						Erect plants	Sound yield			
1948 RESULTS — concluded										
		bu.	perct.	perct.	perct.	perct.	perct.		perct.	perct.
41	Ward 116.....	111.2	4.7	22.8	74	104	98	Medium	10.8	4.8
42	Kelly K-44.....	110.9	3.0	25.4	76	107	99	M-high	10.6	5.0
43	Producers 510.....	110.8	2.4	22.8	64	90	100	Medium	11.2	5.0
44	Doubet D-3(W).....	110.7	2.1	23.2	72	101	130	M-high	10.6	4.7
44	P.A.G. 170.....	110.7	.3	24.2	66	93	102	M-high	10.6	4.6
44a	Illinois 1332 (Tiemann).....	110.7	4.1	23.2	73	103	98	M-high	11.0	5.1
47	Morton M-12.....	110.6	2.5	22.4	70	98	99	M-high	11.6	5.1
48	DeKalb 642.....	110.2	.6	23.4	61	85	101	M-high	11.5	4.9
49	Sieben S-450.....	110.1	.7	22.6	76	107	100	Medium	11.3	5.1
50	DeKalb 628A.....	109.9	.4	24.0	65	92	101	M-high	11.1	4.7
50	Funk G-37.....	109.9	3.2	22.6	77	108	98	High	11.7	5.2
50	Producers 730.....	109.9	.4	25.7	68	96	101	M-high	11.4	4.8
53	Bear OK-32.....	109.7	1.7	24.5	72	101	99	M-high	11.2	4.8
54	Super Crost 840.....	109.5	3.4	26.4	74	104	98	High	10.3	5.1
55	U. S. 13 (Morton).....	109.2	.8	25.5	74	104	100	High	10.8	4.8
56	Frey 425.....	109.0	2.2	24.0	69	97	98	Medium	11.1	5.0
56	Hulting J-60.....	109.0	3.9	23.1	71	100	96	Medium	11.6	5.0
58	Hulting 101.....	108.7	.6	23.5	71	100	100	M-high	10.7	5.0
59	United U-41.....	108.1	2.8	24.5	77	108	97	Medium	11.2	5.5
60	Illinois 1289 (Station).....	108.0	3.0	24.3	69	97	96	Medium	11.1	5.1
61	Pioneer 335.....	107.8	1.1	22.8	70	99	98	Medium	11.0	5.0
62	Munson M-15.....	107.6	3.8	24.3	72	101	95	M-high	11.1	4.9
63	Illinois 972-1 (Pringle).....	107.1	1.3	26.6	70	99	97	High	10.5	4.7
63	Pioneer 300.....	107.1	2.3	27.4	66	93	96	High	10.7	4.8
65	United U-47.....	106.7	2.8	26.3	74	104	96	M-high	11.1	4.7
66	Illinois 972A-1 (Station).....	106.3	3.6	23.7	68	96	94	M-high	10.9	4.7
67	Keystone 38.....	106.2	2.3	24.6	70	99	96	High	11.4	5.0
68	Crow 607.....	106.1	7.0	21.0	68	96	91	M-high	11.7	4.5
69	Frey 644A.....	105.4	1.1	23.9	65	92	96	M-high	10.6	5.0
70	Huey H-42E.....	105.3	2.0	22.2	78	110	95	Medium	11.8	5.1
71	Farmercraft FC-47.....	105.1	1.5	25.5	58	82	95	Medium	11.0	4.7
71	Furr 67.....	104.9	2.7	24.9	69	97	94	Medium	10.9	5.2
73	Super Crost 668A.....	103.7	.6	25.5	72	101	95	M-high	10.0	4.7
74	Lowe 520.....	102.9	1.6	22.7	80	113	93	M-high	11.3	4.8
75	Lowe 580.....	101.1	2.3	25.4	67	94	91	M-high	12.2	5.2
76	Illinois 972-1 (Appl).....	99.6	3.9	24.5	71	100	88	High	10.6	4.8
77	DeKalb 816.....	99.5	1.3	27.2	75	106	90	High	10.8	4.7
77	Lowe 24.....	99.5	5.4	24.2	67	94	87	Medium	10.7	4.9
79	Moews 85.....	96.9	2.4	19.0	70	99	87	Medium	11.7	4.9
80	Morton M-380.....	93.4	.5	26.4	66	93	86	Medium	10.9	5.0
81	Wards 120A.....	73.8	1.8	28.5	83	117	67	High	10.9	4.7
	Average of all entries.....	111.4	2.6	23.9	71	...	...	.....	11.0	5.0

* This entry was average of U. S. 13 (Lepper) and U. S. 13 (Morton) for 1947 and 1948. ⁴ Four plots were included in the average yield instead of five.

PROVEN HYBRIDS: Most of the following hybrids were not included in the 1948 Galesburg tests because they were top-ranking in the previous three years:

Pioneer 399	Holmes Utility 39	Holmes Utility 29
Pioneer 304	P.A.G. 5897	DeKalb 847
Doubet D-72	Crow 633	Morton M-12
Kelly K-374		

Table 6. — HYBRID RESISTANCE TO CORN ROOTWORM* DAMAGE:
Galesburg Summary, 1943, 1947, and 1948

Rank	Entry	Plants leaning 30 degrees or more	Plants leaning more than 45 degrees	Resistance rating com- pared with average
		<i>perct.</i>	<i>perct.</i>	
1	Lowe 520.....	14.1	1.6	313
2	Funk G-37.....	16.4	3.7	189
3	DeKalb 816.....	23.0	2.8	157
4	U. S. 13.....	28.8	4.4	136
5	DeKalb 817A.....	27.2	17.3	130
6	Illinois 21.....	27.5	5.0	120
7	Producers 940.....	33.9	4.3	106
8	National 125-1.....	33.5	5.3	102
9	DeKalb 628A.....	38.5	8.3	82
10	Crow 607.....	40.7	7.9	80
11	Farmcraft FC-47.....	42.9	10.8	70
12	Producers 730.....	44.7	12.7	64
13	Illinois 972-1 (Pringle).....	47.6	12.6	62
	Average of all entries.....	32.2	6.4	100

In Column 3 (plants leaning 30 degrees or more) a difference of less than 20.7 percent between any two entries is not significant.

* *Diabrotica duodecimpunctata* (F.).

Table 7. — HYBRID RESISTANCE TO CORN ROOTWORM^a DAMAGE:
Galesburg, West North-Central Illinois, 1948

Rank	Entry	Plants leaving 30 degrees or more	Resistance rating com- pared with average ^b
1	Funk G-37.....	percl. 28.8	268
2	Lowe 520.....	5	234
3	Ainsworth X-201.....	1.6	220
4	Bear OK-31.....	35.3	217
5	P.A.G. 392.....	32.9	197
6	Unioned U-47.....	37.1	190
7	Plants 313B.....	37.7	186
8	Illinois 1515 (Station).....	35.5	167
9	Sieben S-430.....	40.2	166
10	Ward 120A.....	33.1	167
11	U. S. 13 (Morton).....	44.1	163
12	Huey H-42E.....	2.9	163
13	Lowe 514.....	42.4	163
14	Schwenk S-24.....	3.5	153
15	Lowe 562.....	45.4	152
16	Keystone 38.....	47.3	150
17	U. S. 13 (Lepper).....	50.9	147
18	Frey 645.....	51.5	143
19	Super Crest F-169.....	52.1	141
20	Moews 85.....	50.9	137
21	Sieben S-340.....	54.6	131
22	Super Crest (FD-7).....	54.9	130
23	Kelly K-44.....	47.5	129
24	Kelly K-99.....	53.4	127
25	Tonteer 356.....	50.9	127
26	P.A.G. 390.....	54.2	125
27	Illinois 21 (Station).....	59.6	122
28	Doubet D-3(W).....	57.7	119
29	Producers.....	57.7	119
30	Producers.....	54.8	117
31	United U-13-3.....	50.9	116
32	United U-14.....	54.7	116
33	DeKalb 817A.....	57.7	115
34	Super Crest 668A.....	58.6	110
35	Ward 110.....	63.7	107
36	Super Crest 840.....	68.3	107
37	P.A.G. 282.....	63.8	100
38	Bear OK-32.....	63.8	100
39	Lowe 24.....	59.8	99
40	Super Crest 746.....	60.4	99
41	Lowe 523.....	70.9	98

In Column 3 a difference of less than 22.8 points between any two entries is not significant.

^a Especially southern corn rootworm, *Diabrotica duodecimpunctata* (F). ^b High rating indicates better standing ability.

Rank	Entry	Plants leaving 30 degrees or more	Resistance rating com- pared with average ^b
42	Funk G-77.....	percl. 65.7	98
43	Kelly K-77.....	70.8	97
44	National 125-1.....	68.0	96
45	Iowa 1416 (Station).....	71.4	95
46	Bear OK-33.....	69.1	95
47	Crow 607.....	73.0	94
48	Lowe 580.....	68.9	93
49	Hulting 101.....	60.8	93
50	Furr 67.....	79.8	91
51	Munson M-15.....	73.9	90
52	Producers 510.....	77.7	89
53	Stiegelmeier S-201.....	77.7	88
54	Illinois 1332 (Tiemann).....	72.1	87
55	Hulting J-60.....	66.4	87
56	Producers 940.....	72.8	86
57	Doubet D-11.....	75.3	85
58	Stewart S-11.....	78.6	84
59	Illinois 1289 (Station).....	76.1	84
60	Sieben S-440.....	71.2	84
61	Morton M-12.....	75.0	80
62	Illinois 972A-1 (Station).....	87.2	79
63	Frey 692.....	92.4	78
64	Illinois 972-1 (App).....	81.1	75
65	Pioneer 335.....	85.5	74
66	Producers 730.....	83.7	71
67	Frey 644A.....	82.6	70
68	Illinois 1511 (Station).....	84.7	69
69	DeKalb 628A.....	84.3	68
70	Hulting 380.....	85.1	67
71	Frey 425.....	93.6	67
72	Producers FC-47.....	81.1	66
73	Morton M-380.....	87.9	64
74	P.A.G. 170.....	86.4	62
75	Illinois 972-1 (Pringle).....	94.6	60
76	Average of all entries.....	63.9	59

Table 8.—EAST NORTH-CENTRAL ILLINOIS: Sheldon, 1948

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		Height of ear	Protein	Oil
						Erect plants	Sound yield			
SUMMARY 1946-1948: Less than 4.8 bushels difference between total yields of any two entries is not significant.										
		bu.	perct.	perct.	perct.	perct.	perct.		perct.	perct.
1	Keystone 38.....	101.6	1.3	24.7	93	103	109	High	.....	.....
2	Bear OK-88T.....	100.3	.6	27.6	89	98	109	M-high	.....	.....
3	U. S. 13 (Station).....	100.0	.7	24.0	88	97	109	High	.....	.....
4	Ainsworth X-14A.....	99.6	1.2	28.8	90	99	107	High	.....	.....
5	Illinois 21 (Station).....	97.4	1.2	24.9	87	96	106	Medium	.....	.....
6	Farmcraft FC-69.....	96.3	.6	26.0	89	98	104	Medium	.....	.....
7	Crow 608.....	94.8	.4	25.0	91	101	102	Medium	.....	.....
8	Schwenk S-66.....	94.8	3.0	23.3	90	99	102	M-high	.....	.....
9	Crow 607(W).....	92.8	.4	24.0	91	100	101	Medium	.....	.....
10	Crow 633.....	90.6	.4	25.3	91	100	98	Medium	.....	.....
11	DeKalb 628A.....	90.5	1.3	26.5	91	101	98	M-high	.....	.....
12	Super Crost F-170.....	89.4	1.2	28.0	88	97	97	Medium	.....	.....
13	Kelly K-77.....	89.1	1.9	24.7	90	100	96	Medium	.....	.....
14	Frey 645.....	88.7	1.4	25.4	92	101	97	Medium	.....	.....
15	National 118.....	88.7	1.8	24.2	93	102	96	Medium	.....	.....
16	DeKalb 817A.....	86.7	3.6	24.5	92	102	91	Medium	.....	.....
17	Moews 520.....	85.7	.7	25.7	91	101	94	Medium	.....	.....
18	Lowe 520.....	83.4	1.3	26.8	92	101	91	Medium	.....	.....
	Average of all entries	92.8	1.3	25.5	90	.....	.....	.....	.....	.....

1948 RESULTS: Less than 8.6 bushels difference between
total yield of any two entries is not significant.

1	Illinois 21 (Holder).....	132.5	1.2	23.8	95	99	127	M-high	10.7	5.0
2	Keystone 38.....	128.5	3.1	24.4	96	100	121	High	10.6	4.8
3	P.A.G. 164.....	125.0	1.8	24.8	96	100	119	M-high	10.5	5.0
4	U. S. 13 (Station).....	125.0	1.6	24.3	96	100	120	M-high	10.5	4.9
5	Kelly K-99.....	124.8	.5	24.6	96	100	120	M-high	10.1	4.8
6	Producers 940.....	123.9	2.2	22.1	96	100	118	M-high	10.8	4.9
7	Lowe 523.....	123.2	.7	23.1	94	98	119	M-high	10.1	4.8
8	Powers 149.....	122.6	4.4	24.2	96	100	114	Medium	10.7	4.6
9	Ainsworth X-14A.....	121.4	.2	25.0	93	97	117	High	11.0	5.2
10	Farmcraft FC-69.....	120.6	.9	24.4	96	100	116	Medium	10.3	4.6
11	U. S. 13 (Morton).....	120.5	2.3	22.0	96	100	114	M-high	10.6	4.6
12	Bear OK-88T.....	120.1	.4	30.1	95	99	116	M-high	10.5	4.8
13	Crow 608.....	118.8	.1	25.8	94	98	115	M-high	10.8	4.8
14	U. S. 13 (Appl).....	118.7	.6	27.4	97	101	114	M-high	10.4	4.8
15	Hulting 380.....	118.1	.6	26.4	94	98	114	Medium	10.9	4.6
16	Super Crost S-12.....	117.0	1.0	22.4	96	100	112	Medium	11.1	4.9
17	Producers 900.....	116.3	.7	25.2	96	100	112	M-high	9.7	5.0
18	Bear OK-34.....	116.3	1.2	26.5	95	99	112	M-low	10.9	4.9
19	Pioneer 339.....	115.2	.2	21.2	93	97	112	Medium	10.9	4.9
20	Ainsworth X-201.....	115.1	1.2	25.2	96	100	110	High	10.9	5.1
21	S.S. 342.....	114.0	.8	30.2	97	101	110	Medium	10.3	4.7
22	Super Crost FD-6.....	113.4	.3	23.4	97	101	110	Medium	11.3	5.0
23	Crow 633.....	112.8	.9	23.6	98	102	108	Medium	11.0	5.1
24	Huey H-50.....	112.8	.1	25.2	96	100	109	M-high	10.9	4.9
25	Huey H-42.....	112.6	2.5	25.2	97	101	106	M-high	11.2	4.8
26	Lowe 580.....	112.5	.4	28.7	96	100	109	M-high	11.4	5.4
27	Huey H-23.....	112.5	.3	25.9	95	99	109	M-high	10.9	4.7
28	Doubet D-3(W).....	112.1	11.9	23.6	97	101	108	Medium	10.7	4.8
29	Illinois 21 (Mountjoy).....	111.0	7.9	25.2	96	100	99	M-high	11.1	5.0
30	DeKalb 666.....	110.4	4.4	24.7	98	102	103	Medium	11.7	5.0
31	P.A.G. 392.....	110.0	1.5	24.7	95	99	105	Medium	10.9	4.9
32	P.A.G. 170.....	109.2	.5	28.1	96	100	105	M-high	10.5	4.4
33	Lowe 555.....	109.1	15.6	25.3	96	100	91	Medium	11.1	4.8
34	Illinois 1508 (Station).....	109.0	3.2	23.2	94	98	102	Medium	10.8	4.7
35	Illinois 21 (Station).....	108.4	2.1	23.9	96	100	103	Medium	11.2	5.0
36	Crow 607(W).....	107.5	.4	23.6	96	100	104	Medium	10.4	4.7
37	Funk G-211.....	107.3	.7	25.2	95	99	103	M-high	10.6	4.8
38	Super Crost F-170.....	107.2	1.1	30.5	95	99	103	Medium	11.1	4.4
38	Ainsworth X-21.....	107.2	1.7	24.3	97	101	102	M-high	10.8	4.8
40	Illinois 972-1 (Appl).....	106.3	2.5	24.6	98	102	100	M-high	10.4	4.9

(Table is concluded on next page)

Table 8. — EAST NORTH-CENTRAL ILLINOIS — concluded

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		Height of ear	Protein	Oil
						Erect plants	Sound yield			
1948 RESULTS — concluded										
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
40	DeKalb 642.....	106.3	.4	24.0	97	101	103	Medium	11.1	4.5
42	Morton M-12.....	106.2	4.7	22.4	96	100	97	M-high	11.3	4.6
43	Hulting 101.....	105.5	.4	22.1	96	100	102	Medium	10.9	4.6
44	S.S. 362.....	105.4	3.8	29.1	97	101	98	M-high	11.1	4.8
45	Low 514.....	105.3	.8	25.9	96	100	101	Medium	10.6	4.8
46	Holmes Utility 39.....	105.0	1.6	28.3	96	100	100	M-high	10.2	4.7
47	DeKalb 628A.....	104.1	3.1	28.0	97	101	98	M-high	10.5	4.6
48	Frey 644A.....	103.8	2.5	25.6	96	100	98	M-high	10.6	5.1
49	Furr 67.....	103.1	4.8	24.4	97	101	95	M-low	10.8	4.8
50	Ward 112.....	102.7	4.5	20.2	94	98	95	M-low	10.9	4.5
51	Trisler T-32.....	102.2	4.9	26.5	97	101	94	M-high	10.4	4.8
52	National 118.....	101.3	2.2	24.4	96	100	96	Medium	11.2	4.9
53	Schwenk S-66.....	100.7	7.9	23.2	98	102	89	M-high	10.7	5.0
54	Pioneer 336.....	100.5	1.2	29.2	95	99	96	M-high	10.6	5.3
55	U. S. 13 (Sibley).....	99.8	5.4	26.2	94	98	91	M-high	10.5	4.5
56	Ward 116.....	99.6	6.5	21.5	94	98	90	Medium	10.5	4.6
57	Super Crost 668A.....	98.1	1.4	26.6	96	100	94	Medium	10.6	4.8
58	Illinois 972A-1 (Station).....	97.4	2.6	25.3	98	102	92	Medium	10.1	4.5
59	National 125-1.....	96.6	.4	25.0	96	100	93	Medium	11.4	5.0
59	Doubet D-11.....	96.6	.4	25.9	96	100	93	Medium	11.4	5.0
61	Super Crost F-169.....	96.2	.5	23.8	98	102	93	Medium	10.9	4.8
62	P.A.G. 270.....	95.8	.6	20.5	97	101	92	Medium	11.0	4.5
62	Moews 520.....	95.8	1.0	26.1	96	100	92	Medium	11.0	4.5
64	Frey 645.....	95.5	2.7	25.5	98	102	90	Medium	10.8	5.1
65	Moews 550.....	94.2	.2	23.9	96	100	91	Medium	10.8	4.9
66	Illinois 1509 (Station).....	93.4	5.7	30.6	91	95	84	M-high	10.3	4.6
67	Illinois 1494 (Station).....	93.3	1.1	20.8	96	100	89	M-low	11.2	4.8
68	Moews 523.....	93.1	.2	26.4	98	102	90	M-high	10.4	4.6
69	Funk G-77.....	92.8	3.3	26.4	96	100	86	M-low	10.6	4.9
70	DeKalb 817A.....	92.1	7.4	22.8	97	101	81	M-high	11.0	5.1
71	Super Crost F-181.....	90.2	.6	27.5	96	100	87	M-high	11.0	5.1
72	Appl A-202.....	88.9	2.6	25.0	98	102	84	M-low	11.4	5.3
73	Kelly K-77.....	88.3	1.1	24.9	95	99	84	Medium	10.6	4.6
73	Kelly K-44.....	88.3	3.2	27.0	96	100	82	Medium	10.8	5.1
75	Frey 425.....	87.6	1.4	28.7	95	99	84	Medium	11.2	5.1
76	Trisler T-19.....	85.0	6.8	26.4	97	101	76	Medium	10.7	4.9
77	Ward 114.....	83.6	3.1	25.9	95	99	78	Medium	11.1	4.5
78	Moews 18.....	81.2	.4	23.5	95	99	79	Medium	10.6	4.7
79	Super Crost F-150.....	78.3	1.7	25.0	95	99	74	Medium	10.6	4.8
80	Iowaleth BC-4.....	76.1	.4	23.8	96	100	73	Medium	11.2	4.6
81	Low 520.....	76.0	3.2	32.4	96	100	71	M-high	10.8	4.8
Average of all entries		105.4	2.4	25.2	96	...	...	.....	10.8	4.8

* Four plots were included in the average yield instead of five.

PROVEN HYBRIDS: Most of the following hybrids were not included in the 1948 Sheldon tests because they were top-ranking in the previous three years:

Pioneer 313B	Pioneer 332	Keystone 38
Pioneer 304	Frey 692	DeKalb 847
Morton M-380	Pioneer 300	Producers 730
Frey 644		

Table 9. — SOUTH-CENTRAL ILLINOIS: Sullivan

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		Height of ear	Protein	Oil
						Erect plants	Sound yield			
SUMMARY 1946-1948: Less than 4.9 bushels difference between total yields of any two entries is not significant.										
		bu.	percl.	percl.	percl.	percl.	percl.		percl.	percl.
1	Illinois 21 (Station) . . .	94.4	.9	20.2	93	102	109	Medium	....	....
2	Illinois 201 (Station) . . .	91.7	1.3	19.9	88	97	106	M-high	....	....
3	National 125-1 . . .	89.5	2.2	20.4	92	101	103	Medium	....	....
4	P.A.G. 612(W) . . .	87.6	1.4	23.4	86	94	102	High	....	....
5	Crow 608 . . .	85.8	.9	20.6	90	99	100	Medium	....	....
6	Keystone 38 . . .	85.6	1.5	21.0	93	102	99	M-high	....	....
7	Crow 805 . . .	85.3	.7	21.2	91	100	99	Medium	....	....
8	Super Crost 746 . . .	83.8	.4	20.9	92	101	98	Medium	....	....
9	Ward 120A . . .	83.6	1.5	21.6	91	100	96	High	....	....
10	Whisnand 917(W) . . .	81.5	1.3	24.2	88	97	94	High	....	....
11	Super Crost 840 . . .	81.1	1.7	21.7	96	105	94	M-high	....	....
	Average of all entries	86.4	1.3	21.4	91	...	...		....	....
1948 RESULTS: Less than 7.3 bushels difference between total yields of any two entries is not significant.										
1	Illinois 2216(W) (Station) . . .	120.4	.4	21.2	75	97	114	M-high	9.8	4.2
2	U. S. 13 (Stone) . . .	117.8	.2	19.7	75	97	111	M-high	9.6	4.8
3	Keystone 45 . . .	117.6	.4	20.8	73	95	111	High	10.4	5.4
3	Producers 900 . . .	117.6	2.4	20.2	83	108	109	Medium	10.4	5.2
5	Bear OK-66 . . .	116.6	1.8	20.0	79	103	109	Medium	9.7	4.6
6	P.A.G. 392 . . .	116.1	.8	18.4	90	117	109	Medium	9.7	4.5
6	Lowe 514 . . .	116.1	3.0	18.9	85	110	107	Medium	10.4	4.7
6	S.S. 362 . . .	116.1	1.7	20.0	81	105	108	Medium	10.4	4.9
9	Illinois 201 (Station) . . .	115.9	2.4	18.9	72	94	107	M-high	10.6	4.6
10	Bear OK-72 . . .	115.7	1.8	19.1	82	106	108	M-high	9.8	4.7
11	Lowe 640 . . .	115.4	.3	19.5	80	104	109	M-low	10.6	5.3
12	P.A.G. 173 . . .	115.3	2.8	18.9	74	96	106	M-high	9.9	4.8
13	Ainsworth X-201 . . .	114.7	2.0	18.7	79	103	106	M-high	10.2	5.0
14	Illinois 1515 (Station) . . .	114.4	.7	19.2	78	101	108	Medium	9.4	4.8
14	P.A.G. 612(W) . . .	114.4	.3	20.7	70	91	108	High	10.5	4.0
14	U. S. 13 (Morton) . . .	114.4	.4	18.9	77	100	108	M-high	10.5	5.3
14	Illinois 1509 (Station) . . .	114.4	1.0	21.3	75	97	107	M-high	9.8	4.7
18	Ainsworth X-13-3 . . .	113.7	1.0	19.5	78	101	109	Medium	9.9	4.5
19	Super Crost 707(W) . . .	113.4	2.8	20.5	62	81	104	High	9.8	4.3
20	National 125 . . .	113.2	.6	19.9	76	99	107	Medium	10.1	5.0
21	Whisnand 917(W) . . .	112.2	1.0	21.6	67	87	105	High	10.1	4.2
22	Appl A-130 . . .	112.0	.4	19.8	73	95	106	M-high	9.9	5.0
23	Canterbury 404 . . .	111.3	1.4	19.2	81	105	104	Medium	10.1	4.5
24	United U-59 . . .	110.9	2.0	19.5	76	99	103	Medium	9.9	4.9
25	Funk G-99 . . .	110.4	2.5	20.4	69	90	102	M-high	10.6	5.1
26	U. S. 13 (Daily) . . .	110.2	.2	19.2	80	104	104	M-high	10.3	4.9
27	Illinois 201 (Mountjoy) . . .	109.6	3.8	18.6	82	106	100	M-high	10.0	5.0
27	Illinois 21 (Station) . . .	109.6	.9	18.4	83	108	103	Medium	9.8	4.8
29	Whisnand 905(W) . . .	109.5	0	22.3	74	96	104	High	10.6	4.8
30	Crow 608 . . .	109.2	.3	19.0	71	92	103	M-low	9.9	4.7
31	U. S. 13 (Appl) . . .	109.1	.4	19.5	80	104	103	Medium	10.3	4.8
31	Lowe 523 . . .	109.1	1.4	18.7	85	110	102	M-low	9.6	4.9
33	U. S. 13 (Kelly) . . .	108.9	0	19.6	81	105	103	Medium	9.9	4.8
34	U. S. 13 (Mountjoy) . . .	108.8	.4	19.2	75	97	103	M-high	9.9	4.8
34	Producers 730 . . .	108.8	2.4	20.4	80	104	100	M-high	10.1	4.4
36	Illinois 21 (Powers) . . .	108.7	2.7	18.6	78	101	100	Medium	10.1	4.9
37	P.A.G. 170 . . .	108.6	.8	19.2	74	96	102	Medium	9.2	4.3
38	Kelly K-44 . . .	108.2	3.0	18.9	79	103	99	Medium	9.8	5.0
39	Wards 118 . . .	108.1	2.8	18.9	78	101	99	M-high	10.1	4.8
39	U. S. 13 (Pfeifer) . . .	108.1	1.8	19.0	90	117	100	M-high	9.8	4.5
41	National 125-1 . . .	107.6	2.2	19.3	83	108	100	Medium	10.9	5.2
41	DeKalb 875 . . .	107.6	3.1	20.0	86	112	99	M-low	11.1	4.5
43	Doubet D-11 . . .	106.9	1.0	18.5	80	104	100	Medium	10.9	5.3
44	U. S. 13 (Canterbury) . . .	106.7	.2	19.5	82	106	101	M-high	9.9	4.6

(Table is concluded on next page)

Table 9. — SOUTH-CENTRAL ILLINOIS — concluded

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		Height of ear	Protein	Oil
						Erect plants	Sound yield			
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
45	Illinois 206 (Seeber)	106.6	1.2	19.1	68	88	100	M-high	10.1	4.7
46	Whinsand 804	106.4	0	18.4	81	105	101	Medium	10.4	4.7
47	Ponder 814	106.2	.9	20.6	73	95	100	M-high	9.4	5.0
48	Keystone 38	106.0	2.8	19.5	85	110	97	M-high	10.0	5.2
48	Ainsworth X-14A	106.0	1.1	22.4	78	101	99	M-high	10.4	5.6
50 ⁴	Super Crost 840	105.7	1.6	19.1	77	100	98	M-high	9.9	4.8
50	Kelly K-88	105.7	.4	19.8	80	104	100	Medium	9.8	5.0
52	Illinois 972-1 (Pfeifer) . .	105.6	4.5	19.9	72	94	95	M-high	9.6	4.6
53	Trisler T-32	105.4	1.6	19.5	76	99	98	Medium	9.6	4.6
54	Lowe 560	105.3	.6	18.9	83	108	99	Medium	10.1	4.8
55	Pointer Brand 1010	104.9	2.8	23.5	72	94	97	M-high	10.9	4.5
56	U. S. 35 (Canterbury) . . .	104.5	.8	18.7	86	112	98	Medium	10.4	4.8
56	Lowe 820	104.5	1.8	20.5	72	94	97	M-high	10.6	5.6
58	Stiegelmeier S-13	104.3	1.4	19.6	80	104	97	Medium	9.8	4.9
58	Iowaleth 25	104.3	.4	19.5	72	94	98	Medium	10.8	4.9
60	Illinois 21 (Daily)	104.1	2.2	20.2	86	112	96	Medium	9.2	4.4
61	S.S. 478	103.9	1.2	19.7	78	101	97	Medium	9.6	5.2
62	Crow 805	103.6	1.0	19.6	76	99	97	Medium	10.2	4.9
63	Pointer Brand 87	103.5	2.9	19.2	71	92	95	Medium	10.1	4.5
64	Daily DX-9	102.4	2.2	19.8	78	101	95	M-high	10.4	4.9
65	Powers 149	102.0	.6	18.3	73	95	96	Low	9.7	5.0
66	Appl A-136	101.8	.3	18.7	55	71	96	M-low	10.0	4.8
67	Wards 125	101.7	.5	18.7	81	105	96	M-high	10.3	4.7
68	Super Crost F-169	101.6	3.5	19.5	84	109	93	Medium	9.9	5.1
69	Embro 36	101.3	2.4	18.0	77	100	94	Medium	10.5	4.8
69	Super Crost 746	101.3	.3	18.5	77	100	96	Medium	9.4	4.8
71	Trisler T-19	101.1	1.2	19.2	81	105	95	Low	9.8	5.2
72	DeKalb 923(W)	100.7	1.0	22.7	70	91	94	M-high	10.2	4.3
73	Morton M-380	99.6	2.4	20.2	73	95	92	Low	10.2	4.9
74	DeKalb 898	99.4	2.2	20.0	79	103	92	M-high	11.2	4.9
75	Pointer Brand 77	96.9	1.7	18.7	71	92	90	Medium	10.9	5.0
76	Super Crost FD-8	96.0	3.3	19.6	77	100	88	M-low	10.9	5.0
77	Wards 120A	94.5	2.4	19.5	81	105	87	M-high	10.4	4.9
78 ⁴	Canterbury 456	94.2	.3	20.5	66	86	89	Medium	10.0	4.4
79	S.S. 342	90.3	.2	20.5	63	82	85	Medium	10.4	4.6
80	Lowe 520	84.7	1.6	20.4	78	101	79	M-low	10.6	4.7
81	Illinois 1459 (Station) . . .	82.2	1.1	29.2	52	68	77	M-high	11.1	5.5
	Average of all entries	107.2	1.5	19.8	77	...	...	.....	10.1	4.8

⁴ Four plots were included in the average yield instead of five.

PROVEN HYBRIDS: Most of the following hybrids were not included in the 1948 Sullivan tests because they were top-ranking in the previous three years:

Doubet D-41
Bear OK-40
Producers 1050
Illinois 21

Pioneer 313B
Crow 607
Pioneer 332

Kelly K-374
Morton M-12
Pioneer 300

Table 10. — HYBRID RESISTANCE TO CORN ROOTWORM^a DAMAGE:
Sullivan Summary, 1944 and 1948

Rank	Entry	Plants leaning 30 degrees or more	Plants leaning more than 45 degrees	Resistance rating com- pared with average
		<i>perct.</i>	<i>perct.</i>	
1	Super Crost F-169	11.8	.2	234
2	Super Crost 746	17.1	1.8	138
3	Crow 608	15.0	3.7	128
4	Illinois 21	19.2	1.8	125
5	Illinois 201	24.0	2.4	99
5	Crow 805	21.2	3.9	99
7	Super Crost 840	26.5	3.4	86
8	Super Crost 707(W)	31.8	2.8	76
9	Whisnand 917(W)	37.3	7.0	56
	Average of all entries	22.6	3.0	100

In Column 3 (plants leaning 30 degrees or more) differences are not significant.

^a *Diabrotica duodecimpunctata* (F.).

Table 11. — HYBRID RESISTANCE TO CORN ROOTWORM* DAMAGE:

Sullivan, South-Central Illinois, 1948

Rank	Entry	Plants leaning more than 45 degrees	Resistance rating com- pared with average ^b	Plants leaning 30 degrees or more	Entry	Plants leaning 30 degrees or more	Resistance rating com- pared with average ^b
		percl.		percl.		percl.	
1	Illinois 1515 (Station)	11.0	287	42	Super Crest 746	25.2	108
2	United U-59	12.7	269	43	National 125	23.4	107
3	Low 640	11.6	257	44	S.S. 342	26.9	106
4	DeKalb 875	11.1	246	45	Pointer Brand 77	28.4	104
5	Low 520	12.0	232	46	Power 149	28.9	104
6	Illinois 1450 (Station)	12.8	200	47	Bear OK 66	28.9	103
7	Bear OK 72	15.5	198	48	Morton M-380	30.5	102
8	Illinois 21 (Powers)	16.1	191	49	Super Crest FD-8	25.4	99
9	Canterbury 456	13.8	187	50	P.A.G. 173	26.6	98
10	Low 514	13.8	181	51	P.A.G. 392	31.7	96
11	Whisnand 905(W)	18.1	179	52	P.A.G. 170	26.4	93
12	Ward 125	16.3	177	53	U. S. 13 (Kelly)	31.7	92
13	Super Crest F-169	18.6	176	54	Pointer Brand 1010	27.6	91
14	U. S. 35 (Canterbury)	17.8	174	55	Illinois 21 (Daily)	28.9	91
15	U. S. 13 (Daily)	19.4	169	56	Embro 36	33.5	89
16	Trisler T-19	17.1	164	57	Trisler T-32	30.4	86
17	National 125-1	18.5	161	58	Illinois 206 (Seebert)	27.4	85
18	Super Crest 707(W)	19.6	158	59	Crow 608	33.0	82
19	Pointer Brand 87	18.5	148	60	Funk G-99	33.0	81
20	S.S. 362	19.6	146	61	Keystone 45	35.4	79
21	U. S. 13 (Pfeifer)	22.1	142	62	Answoth X-14A	29.7	77
22	U. S. 13 (Canterbury)	19.8	141	63	Illinois 201 (Station)	35.9	76
23	Ainsworth X-201	21.0	139	64	Illinois 21 (Station)	38.6	75
24	Ward 118	18.3	139	65	U. S. 13 (Appl)	37.5	70
25	Producers 730	22.0	138	66	U. S. 13 (Morton)	35.5	69
26	Kelly K-44	23.3	137	67	Crow 805	35.3	69
27	Daily DX-9	21.8	134	68	Low 560	33.0	69
28	Ponder 814	21.2	133	69	Canterbury 404	35.4	68
29	DeKalb 898	21.0	133	70	Whisnand 804	42.9	66
30	Illinois 1509 (Station)	22.3	131	71	Super Crest 840	41.7	66
31	Illinois 2216(W) (Station)	21.3	131	72	U. S. 13 (Stone)	40.3	66
32	DeKalb 923(W)	20.8	130	73	Kelly K-88	38.1	63
33	Low 523	25.1	126	74	Ainsworth X-13-3	39.8	62
34	Illinois 201 (Mountjoy)	25.4	126	75	Stieglmeier S-13	45.1	61
35	Illinois 972-1 (Pfeifer)	24.6	126	76	U. S. 13 (Mountjoy)	42.6	60
36	Doubet D-11	22.8	126	77	Producers 900	38.5	55
37	S.S. 478	22.7	121	78	P.A.G. 612(W)	51.5	48
38	Appl A-136	26.0	116	79	Keystone 38	39.7	48
39	Low 820	23.2	115	80	Ward 120A	42.6	46
40	Whisnand 917(W)	26.3	109	81	Appl A-130	59.1	36
41	Lowland 25	23.9	100	Average of all entries..... 26.7			

In columns showing plants leaning 30 degrees or more, differences between hybrids are not significant.

* Especially southern corn rootworm, *Diabrotica duodecim-punctata* (F). ^b High rating indicates better standing ability.

Table 12.—SOUTHERN ILLINOIS: Alhambra

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		Height of ear
						Erect plants	Sound yield	
SUMMARY 1944, ^a 1946, 1947: Less than 6.7 bushels difference between total yields of any two entries is not significant.								
		bu.	perct.	perct.	perct.	perct.	perct.	
1	Whisnand 917(W).....	52.0	.7	24.8	66	106.4	113.9	M-high
2 ^b	Illinois 200.....	50.1	1.0	22.7	60	96.8	111.0	Medium
3 ^c	U. S. 13.....	49.7	1.3	21.4	72	116.1	109.6	Medium
4	Funk G-80.....	47.7	1.6	24.2	55	88.7	104.9	Medium
5	Pioneer 332.....	47.3	1.5	22.4	64	103.2	105.1	Medium
6	DeKalb 816.....	46.0	.7	21.5	70	112.9	101.8	M-low
7	Super Crost 840.....	45.8	.9	21.6	45	72.6	101.1	Medium
7	Illinois 784.....	45.8	1.3	25.3	59	95.2	101.1	Medium
9	Crow 607.....	45.3	3.4	22.9	63	101.6	98.4	Medium
10 ^d	Pioneer 313B.....	44.9	1.1	22.0	66	106.4	99.6	Medium
11 ^e	Illinois 126.....	44.2	1.2	21.4	57	91.9	98.0	Medium
12	Pioneer 300.....	43.0	.6	20.1	65	104.8	95.7	Medium
13	Lowe 840.....	41.9	2.5	24.1	68	109.7	91.5	Medium
14 ^f	Super Crost 1005A.....	39.3	1.3	24.6	53	85.5	86.8	Medium
15	Super Crost 746.....	37.3	.9	22.0	64	103.2	82.6	M-low
Average of all entries.....		45.4	1.3	22.7	62.0	.....	.....	.....
1947 RESULTS: Less than 14.2 bushels difference between total yields of any two entries is not significant.								
1	Illinois 2214(W) (Station).....	71.0	4.2	26.6	44	79.4	143.4	Medium
2	Illinois 1459 (Station).....	65.0	1.7	28.1	67	120.9	134.8	M-high
3	Doubet D-41.....	64.7	3.1	26.4	66	119.1	132.3	M-high
4	Whisnand 905(W).....	63.9	1.6	25.5	41	74.0	132.7	Medium
5	S.S. 903(W).....	62.1	1.4	24.4	54	97.5	129.1	M-high
6	U. S. 13 (Haudrich).....	61.8	4.0	22.1	61	110.1	125.1	Medium
7	Keystone 106(W).....	61.6	2.4	26.5	67	120.9	126.8	Medium
8	Whisnand 917(W).....	59.3	1.7	24.1	72	130.0	123.0	M-high
9	Lowe 855(W).....	57.5	2.4	23.2	62	111.9	118.4	M-high
10	Ainsworth X-13-3.....	56.4	2.1	22.1	65	117.3	116.4	Medium
11	Bear OK-50A.....	56.3	1.0	21.4	67	120.9	117.5	M-low
12	Pointer Brand 87.....	56.2	2.0	22.8	46	83.0	116.2	Medium
13	Illinois 200 (Haudrich).....	56.1	.9	23.6	48	86.6	117.3	Medium
14	U. S. 13 (Kelly).....	55.9	2.4	23.6	64	115.5	115.2	Medium
15	P.A.G. 173.....	55.3	.9	20.9	47	84.8	115.6	Medium
16	DeKalb 923(W).....	55.2	.9	26.4	58	104.7	115.4	Medium
17	P.A.G. 612(W).....	53.8	1.4	26.5	52	93.9	111.8	M-high
18	Illinois 784 (Haudrich).....	53.6	1.3	28.2	59	106.5	111.6	Medium
19	Pioneer 505(W).....	53.5	1.0	27.3	61	110.1	111.8	M-high
20	Huey H-23.....	53.4	3.0	21.2	53	95.7	109.3	Medium
21	DeKalb 875.....	52.4	1.7	23.7	60	108.3	108.6	M-low
22	U. S. 13 (Canterbury).....	52.3	2.6	22.1	46	83.0	107.4	M-high
23	Pioneer 302.....	52.2	.9	28.5	50	90.2	109.1	Medium
24	Whisnand 804.....	51.8	3.4	19.2	47	84.8	105.4	M-low
25	Ward 120A.....	51.7	2.9	23.7	48	86.6	105.9	Medium
26	Ainsworth X-14A.....	51.4	3.0	25.1	74	133.6	105.1	M-high
27	P.A.G. 617(W).....	51.3	1.0	25.9	65	117.3	107.2	M-high
28	P.A.G. 392.....	50.8	1.4	19.7	71	128.2	105.7	Medium
29	Keystone 38.....	50.7	1.4	22.2	46	83.0	105.5	Medium
30	Kelly K-99.....	50.4	1.1	19.6	37	66.8	105.1	Medium
30	Illinois 1453 (Station).....	50.4	2.0	30.7	61	110.1	104.2	Medium
32	Bear OK-315(W).....	50.3	.9	23.5	42	75.8	103.8	Medium
33	Doubet D-42.....	50.0	1.6	20.9	65	117.3	103.8	Medium
33	Ward 125.....	50.0	1.8	22.4	50	90.2	103.6	Medium
35	Super Crost 708(W).....	49.9	3.4	24.7	46	83.0	101.7	M-high
36	Illinois 21 (Haudrich).....	49.6	2.2	21.0	66	119.1	102.3	Medium
37	Keystone 45.....	49.3	1.3	24.9	62	111.9	102.5	Medium
38	Pioneer 313B.....	49.1	2.3	22.0	50	90.2	101.3	Medium
39	Illinois 972 (Pfeifer).....	49.0	4.2	24.3	40	72.2	98.9	Medium
40	Illinois 200 (Burrus).....	48.9	1.3	23.8	49	88.4	102.0	Medium

(Table is concluded on next page)

Table 12.—SOUTHERN ILLINOIS: Alhambra—concluded

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		Height of ear
						Erect plants	Sound yield	
1947 RESULTS — concluded								
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	
41	Bear OK-69.....	48.6	2.3	23.2	69	124.5	100.2	Medium
42	Illinois 2216(W) (Station).....	48.4	2.1	25.1	55	99.3	100.0	Medium
43	Funk G-80.....	48.2	3.8	25.6	66	119.1	97.9	Medium
44	Kelly K-100.....	48.0	1.2	20.1	46	83.0	100.0	Medium
45	Pioneer 300.....	47.9	.8	22.0	50	90.2	100.2	Medium
45	Huey H-20.....	47.9	1.3	22.0	54	97.5	99.8	Medium
47	Kelly K-374.....	47.7	1.8	20.5	50	90.2	98.7	Medium
48	Pioneer 332.....	47.1	2.0	23.2	34	61.4	97.5	Medium
48	Lowe 820.....	47.1	3.2	26.5	62	111.9	96.2	Medium
50	United U-68.....	47.0	1.1	23.4	65	117.3	98.1	Medium
51	Embro 36.....	46.9	2.6	20.6	62	111.9	96.4	Medium
52	United U-49.....	46.8	2.6	23.0	48	86.6	96.2	Medium
52	Illinois 126 (Canterbury).....	46.8	2.7	22.9	32	57.8	96.0	Medium
52	Super Crost FD-8.....	46.8	3.7	19.9	51	92.1	95.2	M-low
55	Daily DX-9.....	46.6	3.3	22.4	57	102.9	95.2	Medium
56	Appl A-130.....	46.5	1.8	23.9	67	120.9	96.4	Medium
57	Super Crost 1010.....	46.3	2.2	27.1	64	115.5	95.6	Medium
58	DeKalb 898.....	46.2	.9	22.7	62	111.9	96.6	Medium
59	Illinois 126 (Haudrich).....	45.7	.6	21.6	46	83.0	95.6	Medium
60	DeKalb 816.....	45.5	1.6	22.5	52	93.9	94.5	M-low
61	Lowe 830.....	45.3	2.0	27.4	36	65.0	93.7	Medium
62	Whisnand 834.....	44.6	5.7	25.9	44	79.4	88.6	Medium
63	P.A.G. 164.....	44.2	2.7	21.5	73	131.8	90.7	Medium
64	Morgan M-546.....	42.8	2.5	21.2	59	106.5	88.0	M-low
65	Lowe 523.....	42.7	2.1	22.3	44	79.4	88.2	Medium
66	U. S. 13 (Morgan).....	40.8	2.2	23.6	71	128.2	84.2	Medium
67	Lowe 840.....	40.4	6.2	27.5	54	97.5	80.0	Medium
68	P.A.G. 170.....	39.8	.6	20.6	42	75.8	83.5	M-low
69	Embro 49.....	39.6	3.2	23.8	49	88.4	80.8	Medium
70	Super Crost 840.....	39.5	1.9	24.0	67	120.9	81.6	M-low
71	Crow 607.....	38.5	4.9	25.6	46	83.0	77.2	Medium
72	S.S. 478.....	38.4	3.8	24.1	49	88.4	77.8	Medium
73	National 129.....	37.7	.6	20.6	48	86.6	79.1	M-low
74	Farmcraft FC-88.....	36.1	12.1	24.6	43	77.6	66.9	Medium
75	Super Crost 746.....	35.8	1.4	21.7	56	101.1	74.5	M-low
76	Pioneer 510(W).....	35.2	2.6	24.7	66	119.1	72.4	Medium
76	Super Crost 1005A.....	35.2	3.0	26.0	62	111.9	71.9	Medium
78	Funk G-90.....	35.0	3.1	26.8	71	128.2	71.5	Medium
79	Crow 608.....	33.2	3.3	21.2	66	119.1	67.7	Medium
80	Brown K110(W).....	30.9	1.8	27.4	74	133.6	63.9	M-high
81	National 125.....	27.1	13.8	23.0	43	77.6	49.4	Medium
	Average of all entries.....	48.5	2.5	23.7	55.3	.....	.....	.....

^a 1945 data omitted because the crop did not mature. ^b 1947 yield was average of Illinois 200 produced by Burrus and Haudrich. ^c 1947 yield was average of U. S. 13 produced by Canterbury, Haudrich, Kelly, and Morgan. ^d Averaged with Pioneer 313D, which appeared in 1944 tests. ^e 1947 yield was average of Illinois 126 produced by Canterbury and Haudrich. ^f Averaged with Super Crost 1005, which appeared in 1944 tests.

Because corn on the Alhambra field was a failure in 1948, the results published a year ago are repeated here. The first planting in 1948 was destroyed by the black cutworm, *Agrotis ypsilon* (Ropt.). The June planting was followed by a month of rainy weather from which the corn never recovered. The poor drainage characteristics of this field contributed to the crop failure.

Table 13. — EXTREME SOUTHERN ILLINOIS: Dixon Springs Bottomland and Upland

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		Height of ear	Protein	Oil
						Erect plants	Sound yield			
SUMMARY, Bottomland, 1946-1948: Less than 5.8 bushels difference between total yields of any two entries is not significant.										
		bu.	perct.	perct.	perct.	perct.	perct.		perct.	perct.
1	Whisnand 917(W)	68.4	.6	23.1	92	101	119	Medium	...	...
2	Lowe 855(W)	64.1	2.1	23.4	90	99	110	Medium	...	...
3	P.A.G. 612(W)	62.9	.6	26.6	92	101	109	Medium	...	...
4	Whisnand 905(W)	62.2	1.0	24.9	91	100	108	Medium	...	...
5 ^a	U. S. 13	57.8	1.4	21.9	94	103	99	Medium	...	...
6	Lowe 840	57.6	.4	22.1	91	100	100	Medium	...	...
7	Whisnand 834	56.0	.8	24.6	87	96	97	M-low	...	...
8	Illinois 784 (Station)	53.9	1.3	27.4	81	89	93	M-high	...	...
9	Ward 120A	52.3	1.7	21.2	93	102	90	Medium	...	...
10	National 129	51.4	2.1	27.8	92	101	88	M-low	...	...
11	Super Crost 1010	51.2	1.0	24.4	94	103	89	M-high	...	...
	Average of all entries	58.0	1.2	24.3	91	...	...			

1948 RESULTS, Bottomland: Less than 8.2 bushels difference between total yields of any two entries is not significant.

1	Lowe 865.....	78.3	.4	21.1	99	101	121	M-low	8.4	4.2
2	Lowe 855(W).....	75.4	.1	23.5	98	100	116	M-low	8.1	4.4
3	Bear OK-110.....	73.8	.4	27.0	98	100	114	Medium	8.2	5.1
4	DeKalb 982(W).....	73.7	.3	21.8	100	102	114	Medium	8.2	4.6
5	Ainsworth X-13-3.....	72.1	1.2	20.8	99	101	110	M-low	8.8	4.2
6	Illinois 1459 (Station)...	71.1	0	26.2	97	99	110	M-high	9.4	4.9
7	Pioneer 313B.....	70.4	1.0	22.8	99	101	108	M-low	7.8	5.1
8	Illinois 2214(W) (Station).....	70.3	.4	22.7	98	100	108	Medium	9.1	4.6
9	Whisnand 917(W).....	70.2	.4	23.5	97	99	108	M-high	8.4	4.4
10	P.A.G. 173.....	70.0	.8	19.6	99	101	107	M-low	8.0	4.5
11	Iowaleth TX-1.....	69.8	0	30.1	96	98	108	M-high	8.8	5.6
12	Bear OK-90.....	69.3	.2	24.6	100	102	107	M-low	9.6	5.0
13	Ward 135(W).....	69.2	0	29.6	98	100	107	M-high	8.8	4.9
14	Illinois 200 (Station)...	68.8	.4	26.4	96	98	106	Medium	8.8	5.3
15	Illinois 1521 (Station)...	68.3	0	30.1	96	98	106	High	10.1	5.2
15	Illinois 784 (Haudrich)...	68.3	.9	24.7	99	101	105	Medium	9.4	4.8
17	Illinois 200 (Haudrich)...	68.2	2.4	24.2	99	101	103	M-low	9.4	4.8
18	Ainsworth X-14A.....	67.8	2.4	26.2	98	100	102	Medium	8.6	5.2
19	Keystone 38.....	67.7	.1	19.9	98	100	104	M-low	9.0	4.3
20	Pioneer 332.....	67.6	.2	23.6	98	100	104	Medium	7.6	4.1
20	P.A.G. 617(W).....	67.6	.2	26.2	98	100	104	M-high	9.6	4.4
22	Funk G-145.....	67.4	.2	29.6	93	95	104	Medium	9.2	5.7
23	Illinois 2216(W) (Station).....	67.3	.7	27.6	98	100	103	Medium	7.9	4.4
24	Pfeifer A-243.....	67.2	.9	28.6	99	101	103	M-high	7.6	5.1
25	S.S. 903(W).....	66.8	0	24.9	96	98	103	Medium	9.6	4.1
25	Doubet D-41.....	66.8	.2	24.3	100	102	103	M-low	8.6	4.8
27	P.A.G. 620(W).....	66.6	0	27.3	95	97	103	M-high	8.2	4.1
27	Pioneer 300.....	66.6	.2	24.2	97	99	103	M-low	8.5	4.2
27	Iowaleth 25.....	66.6	.2	22.3	96	98	103	M-low	9.2	4.6
27	Pioneer 505(W).....	66.6	.8	25.3	98	100	102	Medium	9.8	4.1
31	Pioneer 304.....	66.5	.2	25.5	100	102	103	Low	8.8	5.2
32	Bear OK-40B.....	66.4	1.9	25.0	98	100	101	M-low	8.3	5.1
33	Illinois 126 (Haudrich)...	66.3	.4	22.0	99	101	102	Low	9.2	4.1
34	Funk G-711.....	66.2	3.8	35.7	99	101	98	High	8.2	5.6
35	DeKalb 923(W).....	65.8	.1	26.7	98	100	102	M-low	8.6	4.2
36	Pioneer 302.....	65.1	.3	27.7	100	102	100	M-low	9.1	5.0
37	Embro 155(W).....	65.0	.7	23.2	98	100	100	Medium	9.5	4.3
38	Super Crost 708(W).....	64.7	.1	29.0	100	102	100	M-high	8.4	3.7
39	U. S. 13 (Haudrich)....	63.8	.7	21.3	100	102	98	M-low	8.0	4.6

(Table is concluded on next page)

Table 13. — EXTREME SOUTHERN ILLINOIS — concluded

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Rating for—		Height of ear	Protein	Oil
						Erect plants	Sound yield			
1948 RESULTS: Bottomland — concluded										
		bu.	percl.	percl.	percl.	percl.	percl.		percl.	percl.
39	Lowe 820	63.8	1.6	23.5	99	101	97	M-low	8.9	4.9
41	Lowe 830	63.2	.4	21.0	96	98	97	Low	7.9	4.9
41	DeKalb 875	63.2	1.1	26.5	99	101	97	M-low	9.8	4.6
43	Ward 130	63.0	.1	30.8	93	95	97	High	10.4	5.2
44	National 129	62.9	1.8	23.1	100	102	96	Low	7.8	4.8
45	P.A.G. 612(W)	62.8	.5	31.7	98	100	97	M-high	10.2	4.0
46	Doubet D-11	62.4	2.9	21.0	100	102	94	Low	9.8	4.9
47	Whisnand 905(W)	62.2	.6	28.3	95	97	96	M-high	8.6	4.8
48	Super Crost FD-8	61.6	.1	20.5	100	102	95	Low	8.9	4.8
49	Whisnand 834	60.8	0	24.4	95	97	94	M-low	8.8	4.5
50	S.S. 901(W)	60.6	.6	24.8	99	101	93	Medium	10.2	4.0
51	DeKalb 816	60.5	2.3	25.2	100	102	91	Low	8.4	4.6
52	Super Crost 1010	60.0	.2	27.4	98	100	93	High	9.4	4.9
53	Embryo 49	59.5	.1	26.4	96	98	92	Medium	9.2	4.4
54	Lowe 840	59.0	.1	25.3	99	101	91	High	10.1	5.2
55	Super Crost 1005B	56.2	1.0	27.7	99	101	86	M-high	8.9	5.6
56	Brown K-110(W)	56.0	.4	23.7	95	97	86	M-high	9.5	5.2
57	DeKalb 898	54.0	.4	23.5	100	102	83	Medium	9.8	4.5
58	Ward 120A	53.0	3.6	20.6	98	100	79	M-low	9.5	4.5
59	Ward 125	51.5	.1	24.6	95	97	79	M-low	8.2	4.2
60	Illinois 784 (Station)	45.0	.2	33.8	81	83	69	M-high	9.9	5.8
Average of all entries		65.2	.7	25.3	98	...	...	.....	8.9	4.7
1948 RESULTS, Upland: Less than 11.8 bushels difference between total yields of any two entries is not significant.										
1	Illinois 2216(W) (Station)	54.6	2.0	24.6	97	107	108	M-high	9.2	4.4
2	Lowe 855(W)	53.4	.4	19.9	91	107	101	Medium	10.2	4.3
3	Whisnand 905(W)	53.1	8.2	19.2	92	98	102	Medium	10.0	4.3
4	Keystone 106(W)	52.7	.4	22.6	89	105	99	Medium	9.9	4.3
5	Funk G-711	51.4	0	28.2	84	103	93	Medium	10.3	5.0
6	Super Crost FD-8	50.2	.7	18.3	86	100	96	Medium	10.1	4.8
7	DeKalb 982(W)	49.8	.2	26.6	85	100	94	Medium	10.1	4.5
7	Illinois 2214(W) (Station)	49.8	.7	26.7	90	99	100	M-high	9.8	4.4
9	P.A.G. 612(W)	49.0	.5	18.5	90	98	100	M-high	11.2	3.8
10	Ward 135(W)	47.5	7.3	30.0	90	88	100	M-high	10.2	5.1
11	Illinois 1459 (Station)	46.6	.4	30.3	92	93	102	Medium	11.2	5.0
Average of all entries		50.7	2.9	24.1	90	...	...	.....	10.2	4.5

* Average of U. S. 13 (Pfeifer) 1946, 1947, and U. S. 13 (Haudrich) 1948.

SOIL ADAPTATION TEST

For the past three years the same six single-cross and same three double-cross hybrids have been tested at Urbana for their adaptation to soils differing in fertility level. The three-year average and the 1948 yields are given in Table 14.

Soils. The two areas used for the tests are on the Agronomy south farm and differ in productivity as a result of long-continued use of different cropping systems. In the Southwest rotation a high state of productivity has been maintained by a systematic rotation of corn, oats, clover hay, and wheat with a red-clover catch crop. The South-Central area has been depleted of fertility by a rotation of corn, corn, corn, and soybeans. Both fields have received manure and phosphate. The predominating soil type on both fields is Sidell silt loam.

Season. The 1948 growing season at Urbana was very favorable. Planting and harvesting were carried out at the normal times. With the exception of 3 weeks following planting, rainfall was well divided and temperatures were neither excessively high nor low. The 1948 season, like the 1946 one, was very favorable. The 1947 season was not favorable for maximum production.

1948 results. The average yield of all nine hybrids in the 1948 test at Urbana was higher than that for any previous year. The same hybrids, Illinois 972-1 and Hy $\times$ O7, that demonstrated their ability in 1947 to yield well under adverse conditions showed their ability to give exceedingly high yields under favorable conditions in 1948.

Early-maturing hybrids were the lower yielding ones on both soil levels.

Three-year averages. The rank of the hybrids in the three-year summary does not differ from their rank in each of the three years. Illinois 972-1 and the single crosses which include the inbreds of which it is composed stand at the top in performance on both levels of fertility. It seems significant that the single-cross Hy $\times$ O7 has had a better performance record over the three-year period on both soil levels than any of the other hybrids tested.

Table 14.—SOIL ADAPTATION TEST: Central Illinois, Urbana

Rank	Entry	Total acre yield	Erect plants	Rating for—	
				Erect plants	Total yield
Highly productive soil ^a '46-'48: Less than 3.0 bushels difference between total yields of any two entries is not significant.					
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>
1	Hy × O7.....	123.2	92	108	110
2	Hy × L317.....	120.8	79	93	108
3	Illinois 972-1.....	120.6	86	101	108
4	Illinois 246.....	116.7	76	89	104
5	WF9 × Hy.....	114.4	92	108	102
6	WF9 × 38-11.....	112.1	91	107	100
7	Illinois 751.....	104.7	78	92	93
8	WF9 × M-14.....	103.8	85	100	92
9	5120 × Hy.....	92.5	84	99	82
	Average.....	112.1	85	...	...
Medium productive soil ^b '46-'48: Less than 2.9 bushels difference between total yields of any two entries is not significant.					
1	Hy × O7.....	71.3	93	107	115
2	WF9 × Hy.....	65.4	96	110	105
3	Illinois 972-1.....	64.8	84	96	104
4	Hy × L317.....	64.4	82	94	104
5	Illinois 246.....	64.2	77	88	104
6	WF9 × M-14.....	60.5	89	102	98
7	Illinois 751.....	59.1	87	100	95
8	WF9 × 38-11.....	57.8	88	101	93
9	5120 × Hy.....	50.1	87	100	81
	Average.....	62.0	87	...	...
Highly productive soil ^a 1948: Less than 6.0 bushels difference between total yields of any two entries is not significant.					
1	Illinois 972-1.....	146.7	91	99	106
2	Hy × L317.....	145.8	94	102	106
3	WF9 × 38-11.....	145.5	95	103	106
4	Hy × O7.....	144.5	93	101	105
5	WF9 × Hy.....	142.5	97	105	104
6	Illinois 246.....	141.5	87	95	103
7	Illinois 751.....	128.4	87	95	93
8	WF9 × M-14.....	127.6	97	105	93
9	5120 × Hy.....	117.2	88	96	85
	Average.....	137.7	92	...	...
Medium productive soil ^b 1948: Less than 5.6 bushels difference between total yields of any two entries is not significant.					
1	Illinois 972-1.....	84.2	90	99	109
2	WF9 × Hy.....	83.3	97	107	108
3	Hy × O7.....	82.2	92	101	106
4	Hy × L317.....	79.9	87	96	104
5	Illinois 246.....	79.4	85	93	103
6	WF9 × M-14.....	77.2	95	104	100
7	WF9 × 38-11.....	74.0	91	100	96
8	Illinois 751.....	72.2	90	99	94
9	5120 × Hy.....	62.6	93	102	81
	Average.....	77.2	91	...	...

^a Highly productive soil: mostly Sidel silt loam, slightly rolling phase; 1946-1948 (Southwest rotation); 1948 (S100, Southwest rotation). ^b Medium productive soil: mostly Sidel silt loam, slightly rolling phase; 1946-1948 (South-Central rotation); 1948 (S700, South-Central rotation).

SUMMARY

In 1948 two hundred eighty-nine hybrids were grown on five fields in Illinois. Planting dates ranged from May 14 to May 26. Good stands were obtained, except on the upland field at Dixon Springs and the Sheldon field. The growing season was excellent for corn.

Results of the 1948 hybrid corn tests were briefly as follows:

1948 yields. The Galesburg field in west north-central Illinois had the highest average yield, 111 bushels an acre. The average yields per acre on the other test fields were: Sullivan, 107 bushels; Sheldon, 105 bushels; DeKalb, 68 bushels; Dixon Springs bottomland, 65 bushels; and Dixon Springs upland, 51 bushels.

The average yield for all hybrids was 92 bushels an acre. This is 31 bushels, or over 50 percent more, than the record 1948 state average of 61 bushels.

Three-year summaries, 1946-1948. The highest-yielding hybrids in the three-year summaries are as follows: **Northern Illinois** — Crow 407, Illinois 751, Sieben S-340, Ferris F-11, Super Crost F-138; **West North-Central** — Pioneer 336, Schwenk S-24, P.A.G. 170, Ainsworth X-21, U.S. 13; **East North-Central** — Keystone 38, Bear OK 88T, U.S. 13, Ainsworth X-14-A, Illinois 21; **South-Central** — Illinois 21, Illinois 201, National 125-1, P.A.G. 612(W), Crow 608; **Southern** — Whisnand 917(W), Illinois 200, U.S. 13, Funk G-80, Pioneer 332, DeKalb 816, Super Crost 840, Illinois 784, Crow 607, Pioneer 313B; **Extreme Southern** — Whisnand 917(W), Lowe 855(W), P.A.G. 612(W), Whisnand 905(W), and U.S. 13.

Proven hybrids, 1945-1947. The five highest-yielding proven hybrids for the northern, west north-central, east north-central, and south-central fields are: **Northern** — Furr 67A, Sieben S-450, Doubet D-1, Nichols 5A, DeKalb 609; **West North-Central** — Pioneer 339, Pioneer 304, Doubet D-72, Kelly K-374, Holmes Utility 39; **East North-Central** — Pioneer 313B, Pioneer 304, Morton M-380, Frey 644, Pioneer 332; **South-Central** — Doubet D-41, Bear OK-40, Producers 1050, Pioneer 313B, and Crow 607.

Lodging. Lodging was of importance on only two fields: Galesburg, where it was 29 percent, and Sullivan, where it was 23 percent. The southern corn rootworm and high winds were mainly responsible. Other fields were outstanding in the uniform erectness of all varieties.

Corn borer injury. In 1948 there was little or no injury on the test fields resulting from European corn borer.

Protein and oil contents. For the first time a sample of each entry from each field was analyzed for protein and for oil. The average protein content for all entries was 10.2 percent, and the average oil content was 4.8 percent. Correlations were run between total yield and protein content, and total yield and oil content on three fields: Sheldon, Sullivan, and Galesburg. Neither the protein nor the oil showed a correlation or mutual relationship to yield.

Rots, smut, and blight. Cornstalk rots were very prevalent during the fall and caused lodging and immaturity in some fields, but in general damage was light. Root rots, smut, and leaf blights were of little importance. Ear rots were most severe on northern Illinois fields that were frosted while the ears were immature.

Effect of soil-productivity level. For the third year six single crosses and three double crosses were tested at Urbana on two fields differing in productivity. The yield of the lowest-yielding hybrid on the medium-productive soil was 62.6 bushels an acre. The yield of the highest-yielding hybrid on the highly-productive soil was 146.7 bushels an acre, representing a gain of 134 percent.

Illinois 972-1 was the highest-yielding hybrid on both levels of productivity. Single crosses made from inbreds involved in the parentage of Illinois 972-1 also yielded high.

The single-cross Hy $\times$ O7 was highest in yield on both soil levels, as an average of three years. Only on the poorer soils was the yield of this hybrid significantly above that of the double-cross Illinois 972-1. The range in yield, as an average of the three years with the same nine hybrids on the two soil levels, was from 50.0 bushels an acre to 123.2 bushels, this high yield being almost $2\frac{1}{2}$ times the low yield.

The three-year average yield of all hybrids on the medium-productive soil was 63 bushels; on the more-productive soil it was 112.1 bushels.

PEDIGREES OF HYBRIDS

Following is a list of open-pedigree hybrids whose performance is shown in this bulletin.

Ill. 21.....(WF9×38-11)(Hy×187-2)	Ill. 1453.....(K4×38-11)(T8×Cl.21E)
Ill. 101.....(WF9×M14)(W26×187-2)	Ill. 1459.....(K4×38-11)(Cl.21E×K201C)
Ill. 200.....(WF9×38-11)(K4×L317)	Ill. 1494.....(WF9×Oh51A)(W22×Oh28)
Ill. 201.....(WF9×38-11)(187-2×L317)	Ill. 1508.....(L7×L17)(L12×Oh28)
Ill. 751.....(A×90)(WF9×Hy)	Ill. 1509.....(P8×L304A)(WF9×Hy2)
Ill. 784.....(Hy×5120)(K4×L317)	Ill. 1511.....(WF9×Hy2)(38-11×L304A)
Ill. 972A-1..(O7×WF9)(L317×Hy)	Ill. 1515.....(WF9×38-11)(B10×Hy)
Ill. 1091A..(WF9×M14)(Hy×187-2)	Ill. 1521.....(T8×Cl.21E)(38-11×K201C)
Ill. 1289.....(WF9×I.205)(M14×W22)	Ill. 2214(W)..(H21×K64)(Ky27×R30)
Ill. 1375.....(N6×Oh51A)(WF9×M14)	Ill. 2216(W)..(H21×Cl.61)(Ky27×K64)
Ill. 1416.....(N6×O7)(WF9×Hy2)	U. S. 13.....(Hy×L317)(WF9×38-11)

CONTRIBUTORS OF SEED

Ainsworth Hybrids.....	Ainsworth Seed Co.....	Mason City
Appl Hybrids.....	Appl's Hybrid Seed Co.....	St. Joseph
Bear Hybrids.....	Bear Hybrid Corn Co.....	Decatur, Box 628
Brown Hybrid.....	Theo. D. Brown.....	Coulterville
Canterbury Hybrids.....	C. E. Canterbury Seed Co.....	Cantrall
Crow.....	Crow's Hybrid Corn Co.....	Milford
Daily Hybrids.....	Daily's Hybrid Corn Co.....	Mattoon
DeKalb Hybrids.....	DeKalb Agricultural Assn.....	DeKalb
Doubet Hybrids.....	E. W. Doubet.....	Hanna City
Embro Hybrids.....	Ed. F. Mangelsdorf & Bro., Inc.....	1020 S. 4th St., St. Louis, Mo.
Farmcraft Hybrids.....	Farmcraft Seed Co.....	Oxford, Ind.
Ferris Hybrids.....	Ferris Hybrids.....	Princeton
Frey Hybrids.....	Frey Hybrid Corn Co.....	Gilman
Funk Hybrids.....	Funk Brothers Seed Co.....	Bloomington
Furr Hybrids.....	Furr Hybrids.....	Genoa
Holmes Hybrids.....	Holmes Hybrids.....	Edelstein
Huebsch Hybrids.....	L. A. Huebsch & Son.....	Mundelein
Huey Hybrids.....	Huey Seed Co.....	Carthage
Hulting Hybrids.....	G. E. Hulting & Son.....	Geneseo
Illinois Hybrids.....	Ill. 21 (Daily's Hybrid Corn Co.; Haudrich Hybrid Corn Co., Belleville; George Holder, Bloomington, Box 801; Ill. Agr. Exp. Sta.; Mountjoy Hybrid Seed Co., Atlanta; Harlin Powers, Brocton)	
	Ill. 101 (Ill. Agr. Exp. Sta.)	
	Ill. 126 (Haudrich Hybrid Corn Co., Belleville)	
	Ill. 200 (Haudrich Hybrid Corn Co., Belleville; Ill. Agr. Exp. Sta.)	
	Ill. 201 (Ill. Agr. Exp. Sta.; Mountjoy Hybrid Seed Co., Atlanta)	
	Ill. 206 (Seeber Bros. Seed Co., Champaign)	
	Ill. 751 (Ill. Agr. Exp. Sta.)	
	Ill. 784 (Haudrich Hybrid Corn Co., Belleville; Ill. Crop Im- provement Assn., ^a Urbana)	
	Ill. 972-1 (Appl Hybrid Seed Co.; Geo. L. Pfeifer, Arcola; Robt. C. Pringle, Sparland)	
	Ill. 972A-1, 1091A, 1289 (Ill. Agr. Exp. Sta.)	
	Ill. 1332 (O. P. Tiemann, Bloomington)	
	Ill. 1375, 1416, 1459, 1494, 1508, 1509, 1511, 1515, 1521, 2214(W), 2216(W) (Ill. Agr. Exp. Sta.)	

^a Seed supplied by the Association was obtained from samples of 1947-grown hybrids submitted for the laboratory test for certification.

Iowaleth Hybrids.....	Iowaleth Hybrid Corn Co.....	Normal
Kelly Hybrids.....	Kelly Seed Co.....	San Jose
Keystone.....	Corneli Seed Co.....	101 Chouteau Ave., St. Louis, Mo.
Lowe Hybrids.....	Lowe Seed Co.....	Aroma Park
Moews Hybrids.....	Moews Seed Co.....	Granville
Morton Hybrids.....	Roy A. Morton & Sons.....	Bowen
Munson Hybrids.....	Carl Munson.....	Galesburg
National Hybrids.....	National Hybrid Corn Co.....	Normal
Nichols Hybrids.....	Nichols Brothers.....	Hebron
P. A. G. Hybrids.....	Pfister Assoc. Growers.....	El Paso
Pioneer Hybrids.....	Pioneer Hi-Bred Corn Co. of Ill.....	Princeton
Pointer Brand Hybrids.....	Moore's Seed & Farm Service.....	Humboldt
Ponder.....	Ponder Seed Co.....	Hammond
Powers Hybrid.....	Harlin Powers.....	Brocton
Pride Hybrid.....	Pride Hybrid Co.....	Glen Haven, Wis.
Producers Hybrids.....	Producers' Crop Imp. Assn.....	Piper City
Schwenk Hybrids.....	W. T. Schwenk & Sons.....	Edwards
Seeber Hybrids.....	Seeber Bros.....	Champaign
Sieben Hybrids.....	Sieben Hybrids.....	Geneseo, R. 1
S. S. Hybrids.....	Coop. Seed & Farm Supply Service, Inc.....	Muncie
Stewart Hybrid.....	Frank S. Stewart.....	Princeville, R. 1
Stiegelmeier Hybrids.....	H. L. Stiegelmeier.....	Normal
Super Crost Hybrids.....	E. J. Funk & Sons.....	Kentland, Ind.
Trisler Hybrids.....	J. L. Trisler.....	Fairmount
United Hybrids.....	United Hybrid Growers Assn.....	Shenandoah, Ia.
U. S. Hybrids.....	U. S. 13 (Appl's Hybrid Seed Co., C. E. Canterbury Seed Co., Daily's Hybrid Corn Co., Haudrich Hybrid Corn Co., Ill. Crop Improvement Assn., ^a Kelly Seed Co., Dale Lepper, Quincy, Roy A. Morton & Sons, Mountjoy Hybrid Seed Co., Geo. L. Pfeifer, Arcola, Sibley Farms Service Corp., Sibley, P. A. Stone & Son, Pleasant Plains) U. S. 35 (C. E. Canterbury Seed Co.)	
Ward Hybrids.....	Montgomery Ward & Co.....	619 W. Chicago Ave., Chicago
Whisnand Hybrids.....	Myron Whisnand.....	Arcola

^a Seed supplied by the Association was obtained from samples of 1947-grown hybrids submitted for the laboratory test for certification.

INDEX TO ENTRIES

When a hybrid appears in the summary portion of a table, the table number in this index is printed in heavy black type. At Dixon Springs the bottomland field is indicated in this index as 13(B), the upland field as 13(U).

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P.A.G. 392	5, 5, 7, 8, 9, 11, 12
P.A.G. 612(W)	9, 9, 11, 12, 13(B), 13(B), 13(U)
P.A.G. 617(W)	12, 13(B)
P.A.G. 620(W)	13(B)
P.A.G. 2847	4
Pfeifer A-243	13(B)
Pioneer 300	5, 7, 12, 12, 13(B)
Pioneer 302	12, 13(B)
Pioneer 304	13(B)
Pioneer 313B	5, 7, 12, 12, 13(B)
Pioneer 332	12, 12, 13(B)
Pioneer 335	5, 7
Pioneer 336	5, 5, 7, 8
Pioneer 339	8
Pioneer 343	4
Pioneer 344	4
Pioneer 349	4
Pioneer 350A	4
Pioneer 353A	4
Pioneer 505(W)	12, 13(B)
Pioneer 510(W)	12
Pioneer 4040	4
Pointer Brand 77	9, 11
Pointer Brand 87	9, 11, 12
Pointer Brand 1010	9, 11
Ponder 180	4
Ponder 230	4
Ponder 814	9, 11
Powers 149	8, 9, 11
Pride D-66	4, 4
Producers 305	4
Producers 311	4
Producers 315	4
Producers 320	4
Producers 510	5, 7
Producers 730	5, 6, 7, 9, 11
Producers 900	5, 7, 8, 9, 11
Producers 940	5, 6, 7, 8
S.S. 342	8, 9, 11
S.S. 362	8, 9, 11
S.S. 478	9, 11, 12
S.S. 901(W)	13(B)
S.S. 903(W)	12, 13(B)
Schwenk S-24	5, 5, 7
Schwenk S-66	8, 8
Sieben S-340	4, 4, 5, 7
Sieben S-440	4, 5, 5, 7
Sieben S-440E	4

Hybrid	Table
Sieben S-450	5, 7
Stewart S-11	5, 7
Stiegelmeier S-13	9, 11
Stiegelmeier S-201	5, 7
Super Crost FD-3	4
Super Crost FD-3A	4
Super Crost FD-4	4
Super Crost FD-6	8
Super Crost FD-7	5, 7
Super Crost FD-8	9, 11, 12, 13(B), 13(U)
Super Crost S-12	8
Super Crost F-138	4, 4
Super Crost F-140	4, 4
Super Crost F-145	4
Super Crost F-150	4, 8
Super Crost F-169	5, 7, 8, 9, 10, 11
Super Crost F-170	8, 8
Super Crost F-181	8
Super Crost 404(W)	4
Super Crost 668A	5, 7, 8
Super Crost 707(W)	9, 10, 11
Super Crost 708(W)	12, 13(B)
Super Crost 746	5, 7, 9, 9, 10, 11, 12, 12
Super Crost 840	5, 7, 9, 9, 10, 11, 12, 12
Super Crost 1005A	12, 12
Super Crost 1005B	13(B)
Super Crost 1010	12, 13(B), 13(B)
Trisler T-19	8, 9, 11
Trisler T-32	8, 9, 11
United U-32A	4
United U-41	5, 7
United U-47	5, 7
United U-49	12
United U-59	9, 11
United U-68	12
U. S. 13	12
U. S. 13 (Station)	8, 8
U. S. 13 (Appl.)	9, 9, 11
U. S. 13 (Canterbury)	8, 11, 12
U. S. 13 (Daily)	9, 11
U. S. 13 (Haudrich)	12, 13(B)
U. S. 13 (Kelly)	9, 11, 12
U. S. 13 (Lepper)	5, 7
U. S. 13 (Morgan)	12
U. S. 13 (Morton)	5, 5, 7, 8, 9, 11
U. S. 13 (Mountjoy)	9, 11
U. S. 13 (Pfeifer)	9, 11
U. S. 13 (Sibley)	8
U. S. 13 (Stone)	9, 11
U. S. 35 (Canterbury)	9, 11
Ward 100	4
Ward 110	4, 4
Ward 112	8
Ward 114	4, 8
Ward 116	5, 7, 8
Ward 118	5, 7, 9, 11
Ward 120A	5, 5, 7, 9, 9, 11, 12, 13(B), 13(B)
Ward 125	9, 11, 12, 13(B)
Ward 130	13(B)
Ward 135(W)	13(B), 13(U)
Whisnand 804	9, 11, 12
Whisnand 834	12, 13(B), 13(B)
Whisnand 905(W)	9, 11, 12, 13(B), 13(B), 13(U)
Whisnand 917(W)	9, 9, 10, 11, 12, 12, 13(B), 13(B)
Single Crosses:	
Hy x L317	14
Hy x O7	14
WF9 x Hy	14
WF9 x M-14	14
WF9 x 38-11	14
5120 x Hy	14

